FEBRUARY 1, 1947

Railway Age

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BYERS WROUGHT IRON BRAKE PIPE

Among the thousands of new cars that are rolling out of the shops today are 600 for the New York, Chicago and St. Louis Railroad: 100 seventy-ton covered hoppers, and 500 fifty-ton all steel box cars.

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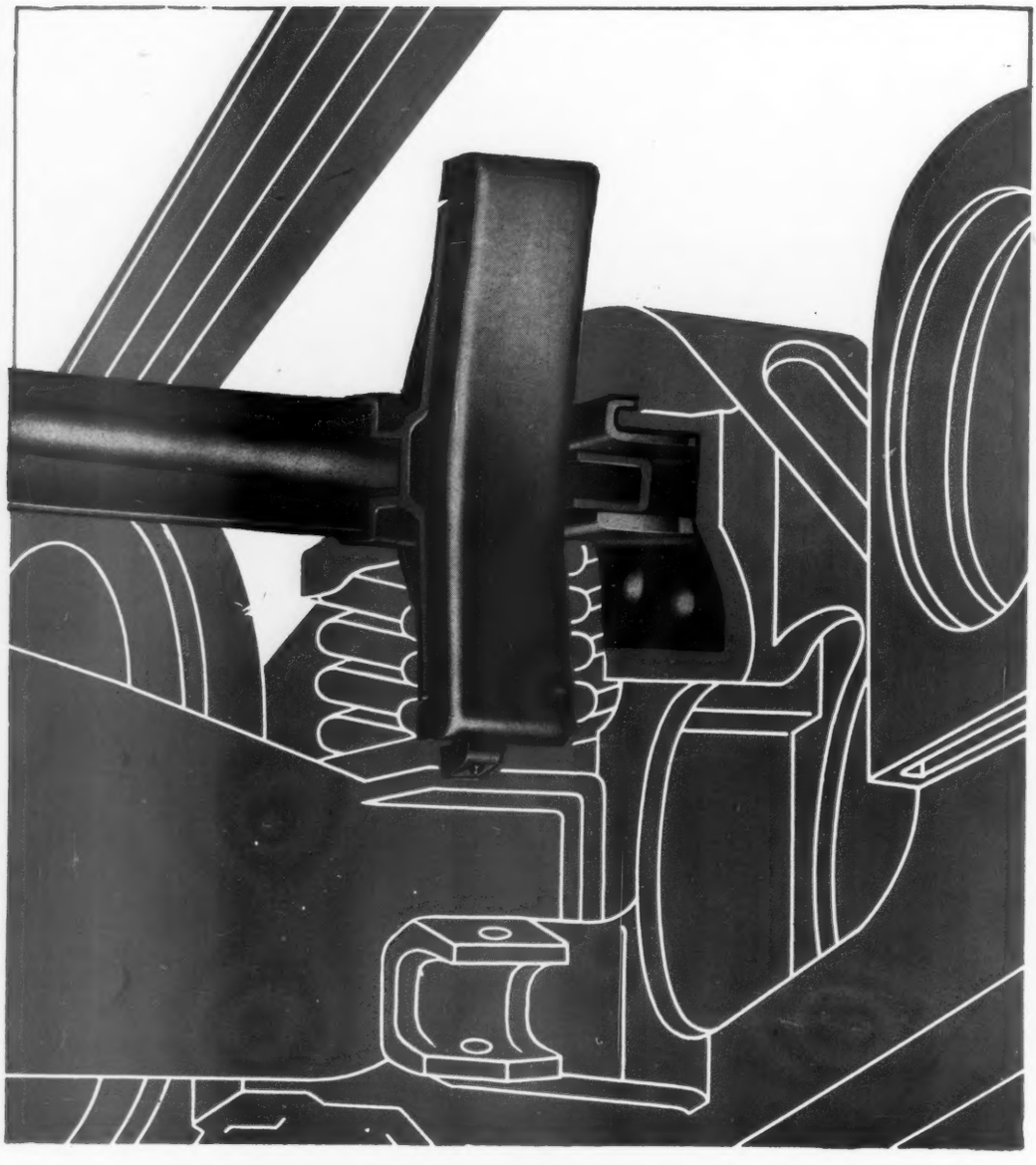

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OF ALL NEW FREIGHT CARS ORDERED FOR DOMESTIC SERVICE IN 1946 WILL BE EQUIPPED WITH UNIT TRUCKS.

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Railway Age is a member of Associated Business Papers (A. B. P.) and Audit Bureau of Circulation (A. B. C.), and is indexed by the Industrial Arts Index and by the Engineering Index Service.

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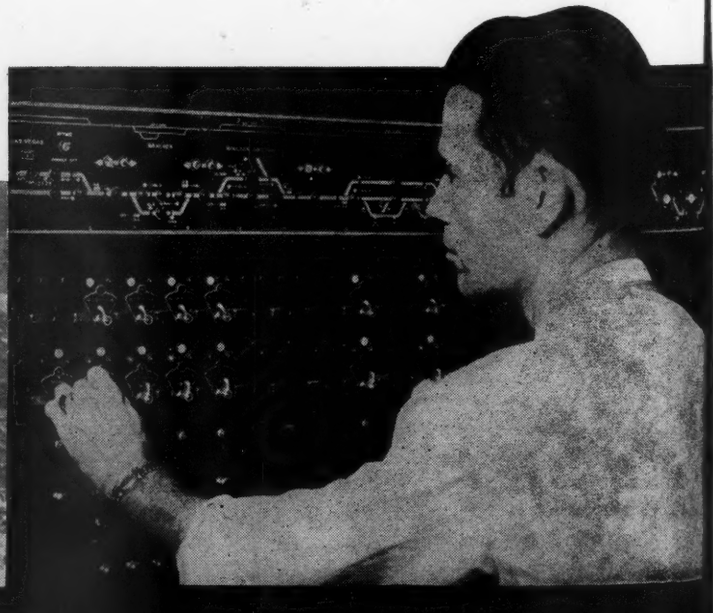

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RAILWAY AGE

The Problem of Labor Monopolies

Most of the labor legislation thus far proposed would not affect relations between the railways and the labor unions much or at all. Yet last May a strike by only two of the 20 railway unions stopped for two days practically all railway service in the United States. A longer strike virtually stopping railway service would reduce all construction, production and commerce almost as much as a general strike in all industry.

The Railway Labor Act has been lauded so much that most people apparently believe it has accomplished its purposes. And yet experience with the Railway Labor Act throws more light on the labor problem than experience with the Wagner Act. Both have failed to cause peaceful and economically sound settlements of disputes. The failure of both has been due to politicians having given monopoly power to labor unions.

Both provide for collective bargaining. But there can be no real "bargaining" when one party has a power of coercion that the other lacks. And this is the situation that has developed under both the Railway Labor Act and the Wagner Act.

Industry-Wide Negotiations Are New

Formerly there were negotiations regarding wages and working conditions between representatives of some labor unions and individual railways. Later there were negotiations between officers of some unions and large groups of railways. And sometimes these more or less local negotiations resulted in strikes—which the unions often lost. Under government operation during and after World War I the Railroad Administration fostered organization of new unions and negotiations and agreements with all railway unions on a nation-wide scale. After restoration of private operation, the unions favored nation-wide negotiations and railway managements opposed them, especially after the nation-wide strike of shop employees in 1922. But gradually nation-wide negotiations have become the practice, although the "operating" and "non-operating" unions usually act as separate groups.

By their success in establishing nation-wide negotiations as standard practice, the leaders of the unions have acquired the power to cause nation-wide railway strikes and the power of applying coercion to the public that it gives. Hence, collective bargaining with them usually fails; they usually reject offers of arbitration under the Railway Labor Act; and disputes usually go to fact-finding boards appointed by the President under the act. And repeatedly some or all of the unions have threatened to cause, or actually have caused, nation-wide strikes rather than accept recommendations made by these boards, with the result in every instance that either President Roosevelt or President Truman has got them more than boards appointed by the President have recommended they be given.

If Power Exists Men Will Use It

The main lesson taught by experience with both the Wagner Act and the Railway Labor Act is as old as the history of mankind. It is simply that you cannot give men—*any* men—great power and rely on them not to use it for their own purposes, regardless of the effects on others. The government accepts this view regarding business. Until within recent years it was government policy to recognize the existence of two kinds of industries—those naturally monopolistic, and those naturally competitive. Public utilities and railroads were considered naturally monopolistic and subjected to special regulation to prevent abuse of the power of monopoly. The anti-trust act was applied to other industries to enforce competition. It is anomalous that, after the railways have been deprived—by water, highway and air competition largely financed by government subsidies—of all semblance of monopoly power, they have continued to be regulated under the Interstate Commerce Act and are being proceeded against by the Department of Justice to prevent abuse of a power of monopoly that they plainly do not now possess. But this illustrates that government is now trying harder than ever to prevent possession or abuse of monopoly power by industry.

Yet it is perfectly plain that a monopoly of all the

labor employed by an entire industry is more dangerous to the public than a monopoly of all the business of an entire industry could be. For no business leader or group of business leaders would dare use the power of monopoly to shut down an entire industry for any purpose.

But we have within recent years seen labor leaders repeatedly threaten to use, or actually use, the power of monopoly, to shut down entire industries.

To talk about the "rights" and "gains" of labor being threatened by legislation that would prevent labor leaders from shutting down entire industries is to assert that the "rights" of union labor are paramount to the rights of the public and that union labor has a "right" to dictate to the public. When labor leaders assert the "right" and use the power of labor monopolies to dictate to the public it has plainly become time for lawmakers representing the public to deprive them of this power of dictation.

There seem to be available two alternative means of destroying the power of labor unions to dictate to the public. One is to let the unions retain their monopolies and continue to bargain collectively with entire industries, but prohibit strikes that would shut down entire industries. The labor unions will fight in the last ditch against legislation to deprive them of their right to strike; and such legislation would savor of the totalitarianism of Russia, Germany and Italy. The other means by which apparently labor unions could be deprived of their power of dictation would be to prohibit collective bargaining by any labor union with any entire industry. But would it be possible to so frame and enforce such legislation as to prevent a national labor union from coercing an entire industry, even though technically it did not bargain collectively with an entire industry?

Monopoly the Basic Trouble

Suppose, for example, that bargaining by all the national railway "operating" unions with all the railroads were prohibited. They would still have power, if they bargained unsuccessfully with individual railroads, to cause strikes that would crush one railroad after another until all had surrendered or succumbed.

In other words, mere prohibition of collective bargaining by any labor union with an entire industry will not deprive any labor union of the power of dictating to an entire industry and to the public *as long as that union is allowed to retain a nation-wide monopoly of a particular kind of labor.*

There seems no solution of the present labor problem short of legislation which will either (1) prohibit any union from having a nation-wide monopoly of a particular kind of labor, or (2) prohibit strikes by any union that is allowed to have a monopoly of any particular kind of labor. Our laws (1) prohibit monopolies in naturally competitive industries and (2) subject to special regulation and control industries supposed to be naturally monopolistic. Why should not government policies applied to labor unions for the protection of the public be similar in principle, purpose and effect to those applied for the protection of the public to the industries with which the labor unions deal?

Cold Weather Blues

The automatic regulating valve in the steam-heat line on a locomotive hauling 16 passenger cars is singing a tune these midwinter days as it controls the flow of steam going back through the train to make the passengers comfortable. If the locomotive happens to be one of the steam types with a boiler of adequate proportions and a tender carrying an ample supply of fuel and water, the maintenance of a supply of steam for train heating purposes is no problem. If a Diesel is on the head end, a situation not uncommon these days, the steam for the car radiators and water heaters must be supplied by a generating unit and its accompanying feedwater supply that can be allocated a relatively small space, a limitation that has placed the development of steam-heating boilers for Diesel locomotives under a definite handicap.

The builders of steam-generating units for Diesels have shown a great deal of ingenuity and resourcefulness in designing a compact piece of equipment that furnishes several thousand pounds of steam during a trip in cold weather. Because it is compact the intensity of use while in operation is high and, if weather conditions are unfavorable and the trains are longer than anticipated, the unit has to work at maximum capacity most of the time. Conditions of this sort are not helpful in producing good results, because mechanical equipment generally performs best when its normal operating range is well below its maximum possible output—and the steam-generating unit is no exception. Another factor that adds to the problem is the need for automatic features that increase the complexity of the equipment. Both the intensity of use and the intricacies of the generators increase the maintenance difficulties and the lack of feedwater capacity is a restriction on some schedules.

As Diesel locomotive design progresses it may be possible to put the main power plant into a smaller package and leave more room for essential auxiliary equipment. With more room available the installation of a relatively simple fire-tube boiler is one approach that has been suggested as a possibility. More space would, of course, be a boon to those seeking more feedwater storage capacity. Perhaps the answer may lie in not expecting steam generators of current design to develop outputs for which they were not intended and then in making sure they get the right kind of attention from the operating crews and the maintenance forces.

Whatever the ultimate solution may be it is certain that the tunes now played by the steam-heat regulating valves on Diesel locomotives do not sound as merry as they should to those responsible for passenger comfort.

The history of labor over the years has been one of consistent increase in power. With this power must go a commensurate sense of responsibility. Power without responsibility inevitably becomes destructive and in due course can result only in undermining the effective functioning of our economic system. In the interests of the country, no less than labor itself, responsible power, wisely administered, will advocate wages, and productivity in return therefor, which will permit industry to function without interruption at maximum production and maximum employment. The productivity of labor must go hand in hand with the wages of labor.
—Gustav Metzman, president of the New York Central

The Case for Head-End Train Power

A power car supplying all heating, cooling, lighting and other electrical needs of an 18-car train would eliminate complications, lower costs and reduce equipment failures

By J. D. LOFTIS

General Superintendent Motive Power
Atlantic Coast Line

CENTRALIZED generation of heat has long been recognized as the most efficient method of supplying heat to individual cars, yet no serious attempt has been made to realize the efficiency and economy inherent in the centralized generation of electrical energy.

The present inefficient gear train setup to transfer power from the prime mover to the generator is shown in Fig. 1. The prime mover (in this case the Diesel-electric locomotive) generates power which is transmitted to the rails through the traction motors, thence by adhesion to the drawbars of the locomotive and car, again from the rail by adhesion to the axle, through the gear drive to the generator, via the generator to the battery, and through the battery to the appliance, or if the appliance is powered by alternating current, through the alternator to the appliance. Each of these transmissions through either electrical or mechanical power is subject to losses.

The transmission of steam through a long straight steam line is also subject to losses, and when this transmission system is further complicated by flexible joints, numerous angles and bends, and other impediments to free flow, the problem becomes much greater. One of the major problems encountered by the Atlantic Coast Line has been that of keeping flexible joints between cars in such condition that major losses will not be encountered in a long train. Our success has probably been average with that of other railroads, but is illustrated by our recent change from 2 in. to 2½ in. train lines. We have, at the present time, two shops devoted exclusively to the repair and reconditioning of metallic steam connectors.

On the modern coaches now in process of construction for the Atlantic Coast Line, the electrical load imposed is projected as follows:

Air conditioning compressor	10.400 kw.
Car air conditioning fan	1.450 kw.
Air pre-cleaner fan	.600 kw.
Evaporative condenser pump	.325 kw.
Exhaust fans	.200 kw.
Amplidyne booster furnishing a.c. for lights, water cooler, etc.	6.250 kw.
Control	.300 kw.
Total	19.525 kw.

With the necessity for 50 per cent of connected load capacity to be available for charging of batteries, the present 20-kw. generator is no longer of sufficient capacity properly to handle the projected loads. There are now in process of development 25- and 30-kw. generators to be used with higher loads.

We in the railroad field are now undergoing the second major change in electric currrent. The first change was from 32-volt d.c. to 64-volt d.c., which is now common on Diesel-electric locomotives. This was not generally accepted for railway car use, however, and we are now changing for new construction from 32-volt d.c. to a combination of 110-volt d.c. and 110-volt a.c. This change has affected railway car construction to a greater extent than would at first be apparent. As an example, it has increased the weight of batteries per car from approximately 4,000 lb. to over 9,500 lb., with consequent increase in size and weight of battery boxes necessary to enclose them.

Car Space Limitations

Because of space limitations under the railway passenger car, it is now felt that when the 30-kw. generator has been installed, we have reached the maximum capacity generator that can be located in this position. Thus, it becomes necessary, if additional power supply is to be furnished, to install combinations of generators up to 30 kw. in capacity. Again, designers are faced with space limitations under the car, because when loads require an increase in generator capacity it is necessary that the capacity of the batteries be increased correspondingly.

With constant demands made upon the mechanical department of the Atlantic Coast Line for additional electrical capacity to eliminate the delays and debris coincident with supplying ice, and coal and wood for ranges, to operate garbage disposal units, for electric decontamination of drinking water, violet ray sterilization of toilet seats, and other uses, and with the space limitations as well as generator and battery limitations, it was necessary to search for an efficient and economical solution to this problem.

It was found that early steps into the field of head-end electrical power generation had been discouraged mainly by lack of demand for capacity, as well as difficulties to be encountered in the free interchange of equipment. Development of this system lay practically dormant until 1936, when the Chicago, Burlington & Quincy placed in service a four-car Diesel-powered train and the Union Pacific later placed in service similar trains which utilized a head-end power unit for lighting and for booster heating in rear cars through the medium of strip heaters.

Early Installations

One of the first attempts to utilize the complete alternating current installation was the Chicago, Burlington & Quincy's "General Pershing Zephyr," but here again need for interchangeability of equipment led designers to utilize the 69-hp., 6-cylinder Diesel engine, direct-connected to an 1,800-r.p.m., 3-phase 220-volt, 30-kw. generator on each car. This power unit was mounted under the car in a sound-deadening enclosure. Heating of the cars was accomplished by using the waste heat from the cooling system of the Diesel engine and booster strip heaters. This system was troublesome, principally because of the location of the power generation unit under each car, where dirt and dust caused failures and shortened the life of the engine and generator.

Another a.c. head-end installation has proved successful. The Central of New Jersey has embarked on a program to equip 60 locomotives and 300 cars with complete a.c. power, supplied from a steam turbo-generator mounted at the rear of the tender of steam locomotives. This is limited to suburban service, and it may be said that lack of interchangeability of equipment has plagued all such developments in the past.

The natural advantages of a.c. power have led heavy consumers of electric power to modernize their plants and change over to complete a.c. This per-

Abstract of an address presented before the Raleigh Section of the American Society of Mechanical Engineers, at Wilmington, N. C.

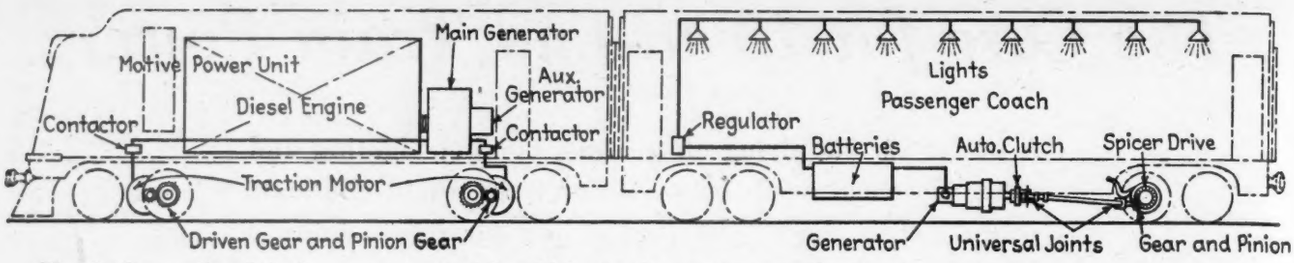


Fig. 1—Conventional train power system in which the locomotive supplies heating and all power requirements

mits use of the brushless motor, hermetically sealed refrigerating units, and more efficient and economical methods ot power transmission. Adequate and highly efficient power-utilizing equipment is available and all that remains to be engineered is a suitable prime mover and distribution system for the loads involved.

The power requirements of a modern railway passenger train, including that required for locomotion, can be compared to those of a town of 1,500 population. The following discussion is of a system selected for an 18-car train, where 4,000 hp. is required for locomotion while 2,000 hp. is required for the electrical load.

The peak loads of this all-electric 18-car train are estimated in the table at the right.

Type	No. cars	Heating (Includes NESA coating)	Battery charging and control	Lighting	Air conditioning	Cooking and refrigeration
Baggage	1	10.0 kw.	1.3 kw.	.75 kw.	....	...
Coach	3	132.0 kw.	3.9 kw.	9.00 kw.	48.0 kw.	.6 kw.
Sleeper (incl. 2 Bar-Lounge cars)	12	528.0 kw.	15.6 kw.	36.00 kw.	192.0 kw.	12.4 kw.
Diner	2	80.0 kw.	2.6 kw.	6.00 kw.	32.0 kw.	70.0 kw.
Total	18	750.0 kw.	23.4 kw.	51.75 kw.	272.0 kw.	83.0 kw.

Maximum connected load on 18-car train at 0 deg. F.—908 kw.
Maximum connected load on 18-car train at 100 deg. F.—640 kw.
Normal load 80 per cent of the time: 400 kw. or less.

The prime mover, or head-end power car, includes two 1,000-hp. Diesel engines, operating at 720 r.p.m. and each driving an a.c. generator rated at 600 kw., 440 volts, 3 phase, 60 cycles at 80 per cent power factor. The generators have flat voltage compounding and are star connected with a neutral lead brought out and grounded.

Three electrically operated, shock-proof, air circuit breakers are provided for connecting the main generators to the power train line. These breakers include suitable overload devices to protect both the main generators and the power train line in the event a fault occurs. Suitable control is provided for the selection and operation of these breakers.

Power is taken direct from the head-end power car to the train through aluminum disconnect boxes for flexible jumpers between cars. The main power train line consists of two 3-phase, 3-wire circuits running the length of the train. Each phase consists of two 300,000 c.m., 600-volt insulated flexible cables. On each passenger car the twelve cables are carried in standard wall steel conduit run under the car frame. With a full load of 908 kw. at 90 per cent power factor, voltage drop at the end of an 18-car train is 5.2 per cent, or 23 volts. Copper loss is 24 kw. At a probable normal load of 500 kw., regulation is 2.57 per cent and copper loss is 13.3 kw. Both power train lines on each car are tapped by 3-point terminal blocks located under the car in

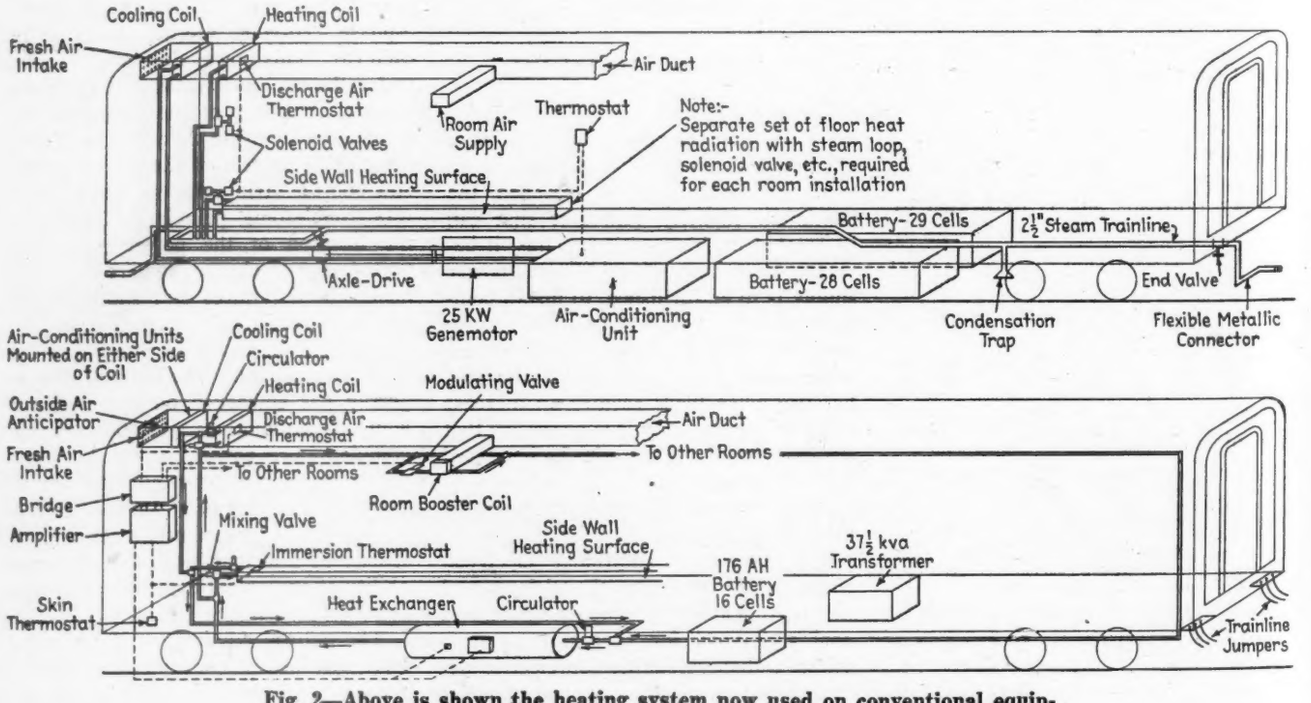


Fig. 2—Above is shown the heating system now used on conventional equipment and below is the heating system proposed for use with head-end power

housings. Main car circuit breakers carry power to the 440-volt heating circuits, and to a 3-phase, 37½-kva. dry type transformer which reduces voltage to 220 and 110 volts for utilization by motors, fluorescent lighting, battery charging, auxiliaries and control.

On dining cars, a duplicate transformer serves the all-electric food storage and cooking equipment. A 3-phase, 440-volt wayside and platform power receptacle is connected to the primary winding of the car power transformer, to provide full operation of electrical equipment if the power car is not connected to the train. A similar power receptacle in the power car serves all requirements normally handled by the power car when the train is standing in areas in which the use of internal combustion engines is restricted. Contactors actuated by suitable automatic controls apply energy to utilization devices as required.

Storage batteries having a capacity of 176 amp.-hr., coupled to an emergency lighting circuit, are supplied in each car. Charging is accomplished with selenium rectifiers. These batteries are available for those short periods when cars are uncoupled from train for switching purposes or when the train is moving through an area in which internal combustion engines cannot be used.

Air Conditioning

The air-conditioning equipment performs four major functions: (1) Heats passenger space in cold weather; (2) cools and dehumidifies passenger space in hot weather; (3) circulates air throughout the passenger space; (4) cleans air electrically.

The major disadvantage in the present system of heat distribution is the loss in transmission. With the proposed system, heat will be distributed with tetracresyl silicate in a closed circuit, utilizing the present zone type of finned tube radiation (Fig. 2). Tetracresyl silicate is a recently developed fluid, inert chemically, which has a boiling point of 800 deg. F., and solidifies at minus 80 deg. F. Inside temperature of windows in passenger space will be maintained at approximately 70 deg. F. by passing electric current through the newly developed NESA coating incorporated in the windows of the cars. Finned tube heating circuits are provided on each side of the car extending the full length, including passenger space, lounge rooms and toilets. The heating surface is placed on each side at the floor in the side wall of the car. Construction is so arranged than an opening approximately one inch in width extends above the surface to the windows with suitable outlets under each window. There is an opening at the floor extending the length of the car so that air can enter at the floor, pass through the heating surface and leave through the openings beneath the windows.

The overhead system consists of a fan, cooling coils and heating coil to provide cooling and the remainder of car heating requirements. Floor and side wall heating controls the basic 68-deg. temperature, with final control of car temperature from the overhead system. Each sleeping room is served by an overhead finned copper booster heating coil installed in the air inlet duct to the room to supply heat to the air entering the room, which again determines the room temperatures. Baggage cars and kitchen sections of dining cars are heated with all-electric type unit heaters located in the ceilings of the cars and arranged to deliver heat toward the floors. Each unit heater is equipped with an electrically driven fan and electric coil to heat the air delivered by the fan.

Equipment for pre-cleaning and cleaning recirculated and fresh air and for cooling and dehumidifying air is located overhead beneath the car roof. Refrigerating equipment is divided into two removable packages of equal capacity, arranged to slide out of the side of the car roof, one on each side. The availability of a.c. power permits the use of package type refrigerating equipment, thereby eliminating the necessity for long distance transmission of Freon and permitting quick replacement of units for maintenance purposes.

All fans, compressors, pumps and other rotating electrical equipment are supplied with induction type a.c. motors. This makes possible elimination of such maintenance items as shaft seals, commutators, belts, pulleys and couplings. Alternating current motors are small, light, low in cost, and require little maintenance.

Electronic temperature control, consisting basically of a Wheatstone bridge, having one leg a resistance thermostat, gives a more efficient control of inside car temperature. Changes in ambient temperature cause the thermostat to vary its resistance and unbalance the bridge. An electronic amplifier increases the imbalance to a strength sufficient to operate a motor which operates the heat controls. For each change in resistance of the thermostat the motor will run in either direction until the motor potentiometer rebalances the bridge. These controls determine operation of the radiant heat, NESA glass heat and of air cooling and dehumidification.

The availability of a large power source immediately opens the way for electric ranges, warming ovens, broilers and refrigeration units now impossible with the more limited power supply of axle generation. This results in a saving of space and reduction of litter, since coal and wood are not required for cooking or ice for refrigeration. Standard commerical 220-volt, 3-phase alternating current kitchen equipment may be purchased for installation in a dining car where this source of power is available. These standard commercial items include range tops, ovens, broilers, coffee urns, toasters, hot tables, deep freeze units, refrigerators, juice extractors, mixers, dishwashers, garbage disposal units, glass washers, sterilamps, ice makers, ice storage, water coolers and water heaters.

The engines in the power car are started by a 64-volt battery, after which power car circuit breakers are closed, applying voltage to the two train line power circuits. Circuit breakers on each car tap the main train line to energize the car circuit. Means are provided to prevent all cars coming on the train line simultaneously to protect the generators on the power car. When car A is energized, it in turn energizes an interlock on the line contactors which de-energizes the main winding of the time-delay relay. After a time delay of 3 to 5 seconds, the time-delay relay drops, closing its "out" interlock, thus energizing the train line to the following car. This system of starting continues in this manner until all cars of the train are operating.

After the complete train is in operation, the equipment in each car is under the control of its own thermostat or switch. For an 18-car train, from 54 to 90 seconds will be required for all cars to be in operation. In the event of an overload on an individual car, only the car in which the fault occurs will be taken off the train line. If the fault occurs on the power train line, the breakers in the power car will be opened automatically by overload trip coils assembled on each pole of the main breakers.

Construction Advantages

Operation of the all-electric system is such that it requires the services of an operator for balancing loads and making minor adjustments which will result in the fullest advantage being taken of its efficiencies and reliability. The duplicate circuits forming the train line transmission are so designed that either circuit can carry the entire load to one or both generators or both circuits can connect partial load independently to each generator. Full safety factor has been provided at the junction between each car.

Details of passenger car construction under the proposed system are simplified, and avoid many problems concident with inclusion of individual power generation.

The all-electric passenger train car offers a major weight reduction as a result of elimination of heavy batteries, mechanical drive, genemotor, steam train line and other under-car equipment.

With the head-end power system, generation of power is consolidated into one large power plant in place of 18 individual small power plants. This will eliminate maintenance on mechanical drive, generator and rotating alternator, if used. In other words, as far as the individual car is concerned, maintenance, both at running inspection points and repair terminals, will be confined to passenger car maintenance and electrical distribution. By placing the power plant within the confines of a power room, greater protection is afforded with the subsequent elimination of the hazards of dirt, ballast, and other foreign objects picked up by the vacuum created by motion. In addition, with the services of an attendant always available, minor adjustments will be made before major faults occur. Also, in having the power plant in a power room, there will be no hazards resulting from failures of hangers and supports.

Maintenance Advantages

When electric generation of heat is supplied, it is possible to eliminate the steam train line. This removes the mass of piping, insulation, connections and fittings from the maintenance problem. As before emphasized, one of the greatest sources of trouble in maintenance of passenger cars is the metallic steam connector or flexible joint between cars. The use of electric current for heating also does away with the problem of maintaining admission valves, steam regulators, etc., and places the greatest portion of the heating equipment within the car where it is not subject to destructive action of the elements. This will also eliminate the delays and expenditures which occur when steam train line traps and other portions of the steam heat system freeze at extremely low temperatures. It is estimated that 1,600 lb. per car of pipe, insulation, valves, fittings and connections will not be required.

The proposed system includes a 176 amp.-hr., 16-cell battery for emergency lighting only which is kept at full charge by the rectifier. The type of service involved will permit a greatly extended life expectancy of the battery with practically no maintenance.

Use of hermetically-sealed packaged-unit air conditioning and refrigeration machines results in lower maintenance through elimination of brush type motors, belts, pulleys and shafts. These machines are easily replaced, permitting repairs to be concentrated at qualified service shops. Package type air conditioning equipment is installed within the roof structure, thereby eliminating long Freon lines and maintenance resulting from vibration and damage occurring to equipment applied under the car structure.

Operational Advantages

Operation of cars over long distances subjects the system to great changes in outside temperatures, necessitating automatically controlled temperatures. This is particularly true of room-type sleeping cars, the varying occupancy of which makes desirable positive control of temperature and air distribution that will respond quickly. Adjustment of inside car temperatures to suit outside temperatures ranging from minus 20 deg. F. to plus 110 deg. F. are made automatically with positive controls. It has been said that railroads, in order to attract traffic, must be prepared to offer the traveler the beginning of his vacation when he steps on the train rather than when he steps off the train at his destination.

Possibilities for human failure and material failure are reduced by the elimination of the following items requiring maintenance on every car:

Generator
Generator drive
Generator speed switch
Generator reversing switch
Generator voltage regulator
Large power batteries
Lamp regulator
Steam specialties
Motor brushes and commutators
Compressor shaft seals.

Removal of the steam train line with its inability to convey steam in sufficient quantity for heating will reduce complaints during low temperatures, and eliminate poor visibility resulting from excessive steam leaks. Experience has demonstrated that it is almost impossible to eliminate steam leaks with the present system of conveying steam through a long train.

Fuel used to operate the Diesel-electric power unit in generating all of the current to perform the work of heating, cooling, refrigeration, air distribution and cooking, is estimated to be eight gallons per hour. This is less than that required for the operation of head-end steam generators now used to heat an 18-car train.

Removing the drag of axle generation for each car makes available additional horsepower for traction purposes. The power savings on an 18-car train approximate 750 horsepower at the rail or 900 engine horsepower. This additional traction horsepower becomes available for increased speeds, additional hauling capacity, or both. It is understood, of course, that approximately 235 horsepower is required to haul the head-end power car.

One of the great operational advantages to be gained is the reduction of heavy expenditures for standby service. With this system, it is possible to make the individual car self-sustaining by installing 440-volt, 3-phase, 60-cycle connections which can be obtained at almost any passenger car setout point. This then eliminates the necessity for steam standby service and battery charging equipment now required for conventional cars.

In restricted areas, such as underground terminals, where it is impossible to operate heat generating units, the system will permit full standby operation of all equipment during the preloading and loading periods when the train is standing.

Time consumed for inspection at intermediate terminals will be reduced materially because items now subject to inspection, such as generators, drives, and steam train lines, will be non-existent.

Operational Disadvantages

It may well be argued that adoption of this system will present problems in interchange of equipment. This argument is sound from an operational standpoint, but from a progressive standpoint, the difficulties involved until all systems are changed to the head-end power system are more than offset by the improved quality of transportation furnished and the numerous savings to be realized in reduction of terminal facilities.

Failure of a power generating unit is always a possibility. The power car, however, carries two Diesel-driven generators, either of which can handle the load imposed by an 18-car train with outside temperatures of zero deg. F. Use of wheel slide controls of latest design as well as known operational efficiency of the power system selected preclude entire mechanical failure of the power car. Duplicate train line transmission of power makes failure of individual cars remote.

Argument may also be presented that this equipment as projected is new and untried in the railroad field. This is admitted, but each individual component of this system with the exception of the fluid to be used in the circulating heating system (which is optional) has been tried and proved in other services.

Comparative Maintenance Cost

The head-end power train appears at its best advantage when maintenance is compared with that of the conventional train of identical consist. Estimated figures show an average saving in maintenance of $2,329 per car per year. Strictly from a maintenance standpoint, the savings involved for an 18-car train would be $41,922 per year. The estimated maintenance required for the

power car is $9,000 per year, which would reduce this saving to $33,000.

It is the opinion of the mechanical department of the Atlantic Coast Line that construction cost for cars containing this system will be materially less than cars of conventional design, but in order to be conservative, we have assumed the construction cost to be the same. If the savings in maintenance alone were applied to the purchase price of the head-end power unit they would amortize this investment in less than six years. This, of course, does not include the substantial savings resulting from elimination of facilities necessary for standby service, reduction in inspection cost, savings to be derived as the result of less fuel consumption, and many intangible savings too numerous to list here. Neither does it include that intangible increase in operating revenues which should accrue as a result of more efficient transportation service rendered. Conversely, this does not include the wages of the operator required in the head-end power car. A portion of the expense for this attendant, however, is now being spent by maintenance forces making emergency repairs at intermediate terminals.

The magnitude of the problem presented is so great that a large number of the American railroads must convince themselves of the feasibility of this system before a single railroad can make progress in equipping its through main line service. We believe that the problem presented is well recognized throughout the railroad industry and attempts at solution are being made by the trial installations mentioned before. The Atlantic Coast Line gave serious consideration to the installation of this system to cars now being constructed, but because of the limited time available for its development it has not yet been included. The Atlantic Coast Line is firmly convinced that this system or a modification of the general principles thereof is the solution to the present impasse with which car designers and builders are faced in construction resulting from the impediments mentioned previously.

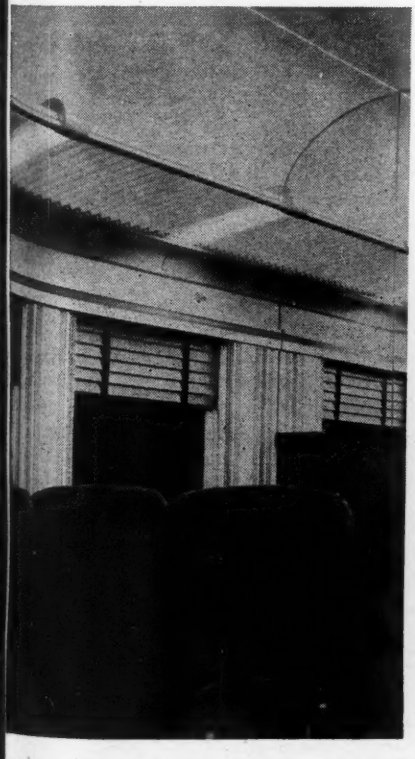
We are indebted for the engineering assistance given in the preparation of this study to the Westinghouse Electric Corporation, the Minneapolis-Honeywell Regulator Company, the Pittsburgh Plate Glass Company, the John Van Range Company, the Electro-Motive Division of General Motors Corporation, and the General Electric Company.

Corrugated Plexiglas

Plexiglas in the form of corrugated sheets, produced by a process developed at the Rohm & Haas Company, Philadelphia, Pa., is said to combine the decorative advantages of a transparent corrugated material with the safety, flexibility and ease of handling found in the usual flat acrylic plastics. Corrugation makes a thin sheet rigid and usable where a much thicker sheet of the flat material would tend to sag or bend.

Baggage racks made of 0.080-in. thick Plexiglas are said to be able to withstand the impact of 25 lb. lead weights and to support these weigths without visible deflection. Corrugation also reduces the area of Plexiglas exposed to surface abrasion and effectively diffuses any scratches which do occur.

Corrugated Plexiglas may be made of either clear or colored acrylic plastic by any custom fabricator. The design of the corrugation, depth, frequency, and shape may be varied to suit the individual requirements.



Corrugated Plexiglas used in the baggage racks of a modern coach

Clarkat Tractor

A new model Clarkat towing tractor has been announced by Clark Tructractor, division of Clark Equipment Company, Battle Creek, Mich., which, it is said, incorporates a number of improvements, including greater accessibility to motor and drive units, as well as new front axle design and suspension which give the tractor maximum stability.

Powered by a four-cylinder Continental L-head-type industrial motor, the Clarkat has a standard automotive-type transmission with three speeds forward and one reverse. The unit has a hand-operated brake for parking, while its rear wheels are equipped with internal expanding hydraulic brakes.

The Clarkat, which is said to be able to achieve speeds up to 10 m.p.h., is available in two models with a drawbar pull of 2,000 lb. and 2,600 lb., respectively. Both models may be equipped with solid or pneumatic tires at the option of the purchaser.

This sturdy unit is easily maneuvered and speeds loading jobs

A view of one of the spans, loaded on barges and under way to its new site 80 miles away

Railroad Bridge "Sails" to New Position

Truss spans 300 ft. long floated 80 miles on barges in T. V. A. river project. Formerly an Illinois Central structure, the bridge, in its new location, now serves the N. C. & St. L.

By KENNETH C. ROBERTS

Head Structural Engineer, Tennessee Valley Authority

IN the construction of the Tennessee Valley Authority's reservoir project on the Tennessee river at Gilbertsville, Ky., including what is known as Kentucky dam, one of the major problems confronting the engineers was that of moving an existing railroad bridge from its location near the downstream side of the dam to a new position approximately 80 miles upstream. Seven spans of the structure, including three truss spans 300 ft. long, were relocated, steel barges of the type commonly used to transport coal, gravel and similar materials being used to float the three 300-ft. spans to the new location. The bridge was formerly the property of the Illinois Central, but, because of adjustments to its approaches occasioned by the Kentucky dam project, it was no longer required by that road, and was moved to its new location to serve the Nashville, Chattanooga & St. Louis where this road crosses the reservoir created by the dam, near Johnsonville, Tenn.

The Kentucky dam project is the largest of the main river developments of the Tennessee Valley Authority and the reservoir created in this project extends in a southerly direction almost entirely across the states of Kentucky and Tennessee. Three railroad lines were affected by the work, namely, the Illinois Central's line from Louisville, Ky., to Paducah and Fulton, which formerly crossed the river immediately below the dam site; the Louisville and Nashville's route between Louisville and Memphis, Tenn., crossing the river near Danville, Tenn.; and the main line of the Nashville, Chattanooga & St. Louis, from Nashville, Tenn., to Memphis, which crosses immediately west of Johnsonville, Tenn.

Map of part of the territory covered by the Kentucky-Dam reservoir, showing the old location of the bridge at the dam site and its new location on the N. C. & St. L. west of Johnsonville

Each of these river crossings was to be flooded by the rising waters of the new reservoir. In the case of the L. & N., the necessary adjustment of its crossing was made by raising the existing bridge approximately 18 ft. and increasing the height of the supporting piers. However, the crossings of both the I. C. and the N. C. & St. L. required adjustments of greater magnitude, the former because of its location immediately adjacent to the new dam, and the latter because nearly 10 miles of line, including the river bridge, was to be submerged.

In the case of the Illinois Central crossing, relocation of a considerable section of the line was necessary because the easterly approach to the bridge followed along the river above the proposed dam and was below full reservoir level. In this change the new line was carried across the river on top of the new dam, and the bridge, relieved of traffic, became the property of the Authority.

The bridge consisted of three through-

truss spans 300 ft. in length, two through-truss spans 300 ft. in length, two through-truss spans 150 ft. in length, two deck-girder spans, each 68 ft. long, and a horizontal, through-truss swing span over the navigable channel of the river. All of the through-truss spans were of the Pratt type. Built in 1903, the structure was well and conservatively designed and had been maintained in good condition throughout its period of service.

West of Johnsonville, the N. C. & St. L. traversed the broad flood plain of the river at elevations 10 to 15 ft. below full pool level, which made it necessary to relocate approximately 10 miles of the line and to construct an entirely new bridge over the channel of the reservoir. Topography and foundation conditions fixed the location of the new bridge within narrow limits and, together with the federal requirements for navigable waterways, established the length of the new structure at approximately 1,740 ft.

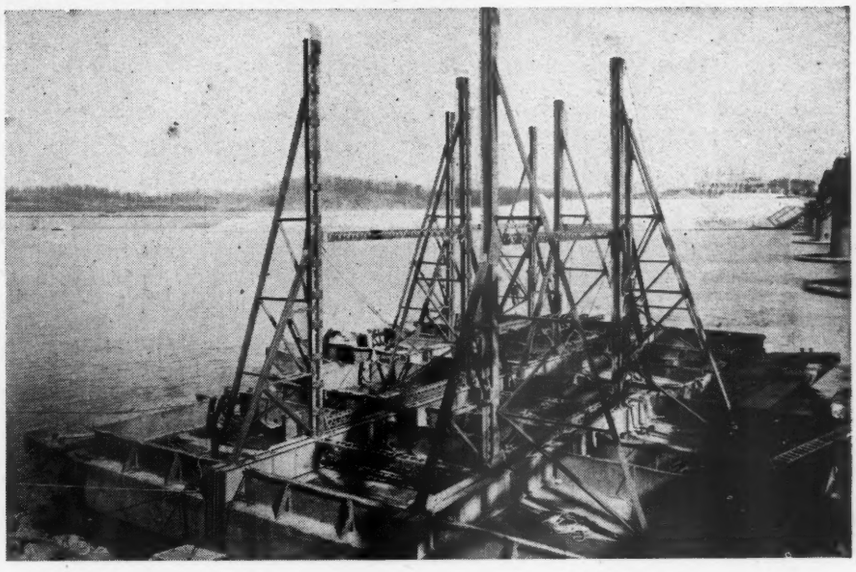
When these factors became known, it was apparent that, except for the swing span, which did not provide sufficient horizontal clearance to meet new navigation standards established on the Tennessee river, the Illinois Central bridge to be relieved fitted remarkably well into the propesd N. C. & St. L. layout. It was decided, therefore, while the project was still in the planning stage, to utilize all of the fixed spans of the I. C. structure in the new N. C. & St. L. crossing, but to substitute a longer, vertical-lift span for the swing span of the older bridge.

A Fortunate Decision

This decision was made in line with a policy adopted early in the T. V. A. program of using existing structures in reservoir adjustments wherever possible, and was most fortunate because serious delay would undoubtedly have occurred if it had been necessary to design and fabricate an entirely new bridge.

The substructure of the new bridge is of concrete and was constructed by T. V. A. forces in advance of the filling of the reservoir, thus avoiding the difficulty and expense of working in deep water. Excavation for the piers directly within the river channel was carried out by open-dredging methods inside steel sheet-pile cells and, with one exception, these piers were founded on rock. One channel pier, however, and the remaining piers and abutments outside the channel area, were founded on steel H-piling.

The superstructure was erected under a contract which included the removal of the old spans from the location near the dam and installing them at the new site, and the construction of the new vertical-lift span with its counterweight towers. The contractor elected to dismantle the shorter truss and deck-girder spans, which in the new location were to extend over shallow water, and to re-erect them on falsework. However, it was decided to float the three 300-ft. spans, each weighing 800 tons, to their new locations.



Above—Four barges, lashed in pairs, were used to move each span. The barges were strengthened by means of girders, and supporting bents were erected above these girders to carry the load. Below—The barges in position to pick up one of the spans at the old bridge site

The Floating Equipment

In the floating operations, four barges, each of 300-tons capacity, were used in pairs to support each span. As the barges were incapable of supporting concentrated loads without additional strengthening, twin transverse girders were erected across each barge to carry the load to the sides. These twin girders were located at about the third points of the barges at a spacing equal to the overall width of the span. After the barges were lashed together in pairs, braced supporting bents were erected above each pair, resting on the strengthening girders. The vertical members of these bents supported a pair of jacking girders, arranged one above the other, each of which could be connected to the verticals at any one of a series of holes for pin connections.

The jacking equipment consisted of eight 200-ton hydraulic jacks, two for each barge or one for each pick-up point. The jacks were fitted with safety collars and all eight were connected in parallel to an air-operated pump which was placed on the deck of each span while it was being moved.

Limiting Factors

The work of transferring the spans from the existing piers to the barges and their subsequent movement to the new location was subject to limitations

Moving one of the spans through the locks at Kentucky dam

inherent in the spans themselves and to physical conditions at the old site and in the reservoir.

That portion of Kentucky dam lying within the natural river bed was constructed in cofferdams in two stages, so that for several years during construction the flow in the river was carried in approximately half its original channel. To protect the river piers of the I. C. bridge from scouring under the higher velocities during this period, they had been enclosed in gravel-filled, sheet-pile cells, extending above normal water level. These cells prevented the barges from making a close approach to the piers and made it necessary to pick up each span at the second and third panel points, rather than at the end reactions. This resulted in relatively large compression stresses being set up in the lower chords.

Since the bottom chords of the trusses were fabricated from eye bars and were incapable of withstanding any substantial compression, it was necessary to devise some means of relieving them of the compression stresses while supported on the barges. This was accomplished by introducing temporary inclined diagonals in the second panels, connected at their upper ends to the top chords, while their lower ends were connected to the track stringers, which then served as stiff bottom chords.

Jacking Arrangements

Tail-water level at the Kentucky dam determined the necessary range to be provided for in jacking the spans from their old positions on the piers to the transporting position on the barges. At this point the water level is influenced by conditions on the Ohio river as well as by the discharge of the Tennessee river through the dam, and is subject to wide fluctuation, particularly during the winter and spring months. Because of this, a lifting range of approximately 36 ft. was provided in the design of the jacking and transporting structure. The jacking lift from the barges to the piers at the new location was substantially less than the maximum provided.

It was necessary to delay the movement of the spans until sufficient water was contained in the reservoir to float the barges to the new location. Also, the movement could not be started until locks at the dam had been completed and placed in operation.

Moving the Spans

In raising each span from its old piers, the barges were floated under the span in pairs and were positioned with their supporting structures immediately below the pick-up points. The lower jacking beams at the pick-up points were connected to the posts of the supporting bents to provide bases for the jacks. The upper beams, seated on the jacks, were then raised to bear against the bottom chords. Jacking was controlled by means of a single valve near the main pump which, as mentioned previously, was located on the deck of the span.

Jacking proceeded in steps of approximately 15 in., and men were stationed at each jack to follow the movement with the safety collar. When the jacks were raised to the maximum heights, the upper beams were pinned off to the bent posts. The lower beams were then raised by hoists to a new position for the next lift and the jacks were reset. This phase of the work was carried out smoothly and without special incident.

The most critical factor in the work of moving the spans proved to be in the timing of the various operations. The overall height of the spans, when supported on the barges, exceeded the normal vertical clearance at a bridge across the lock entrance, and also at two highway bridges over the reservoir. Consequently, the floating of each span through the locks had to be carried out at times when favorable conditions of water regulation permitted increasing the clearance to insure safe passage.

The only tow boats available for the work were much too small for handling the barges properly when loaded with the spans. Movement up the reservoir was slow and, although the spans were securely lashed to the barges, the tow as a whole was rather unwieldy and was highly susceptible to wind action. In spite of this, however, all of the spans were moved safely.

On arriving at the new site the spans were first jacked up to clear the anchor bolts on the new piers; then the barges were floated into exact position and the spans were jacked down onto the bridge seats into their final positions.

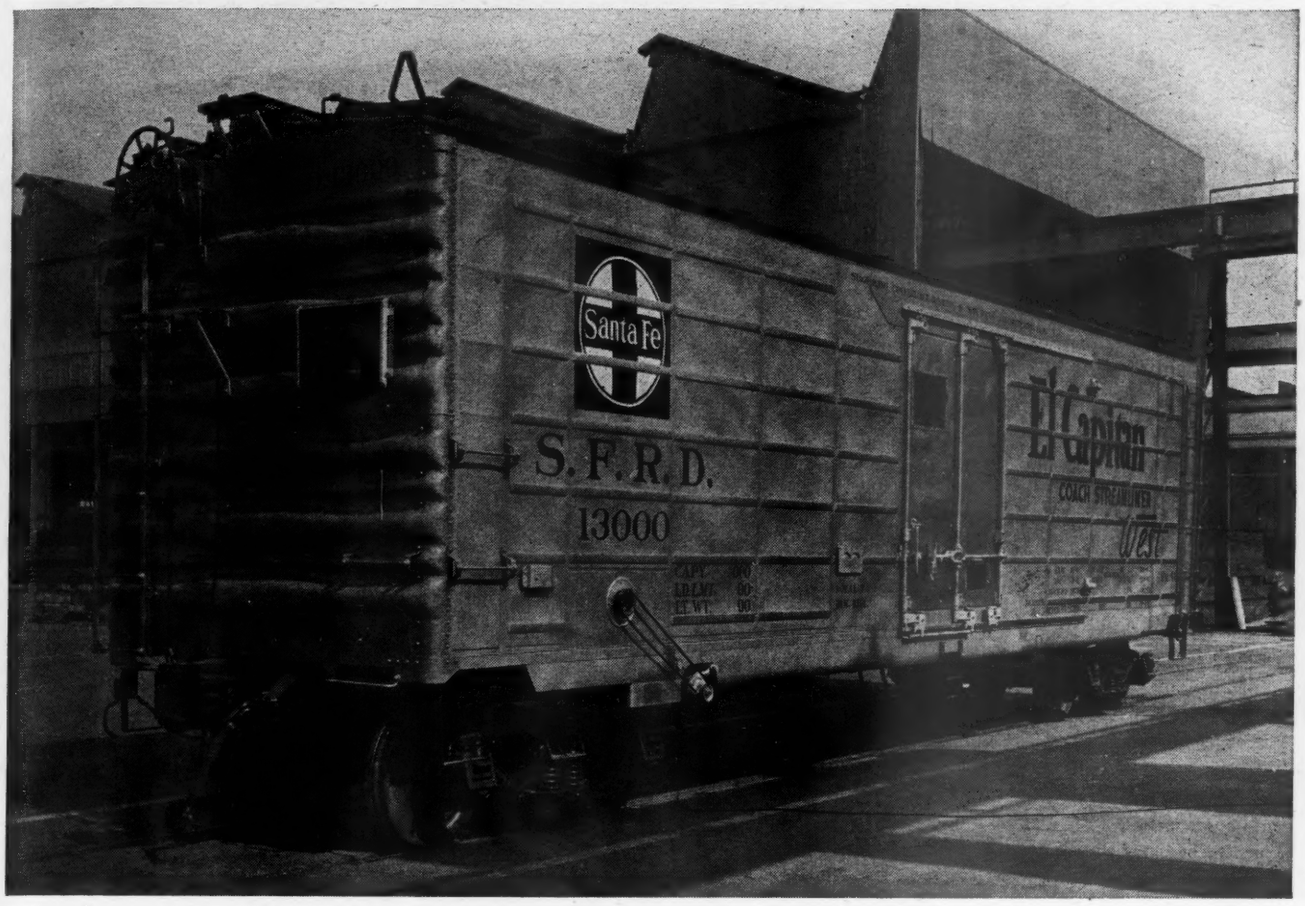
Erecting the Lift Span

With the experience gained in floating the three long spans of the older structure, the contractor elected to use this method in setting the new vertical-lift span. This span, 360 ft. long, was erected on falsework in a barge harbor near the bridge site and was then floated into position in the same manner as were the fixed spans. This scheme permitted the use of lower falsework and erection of the span in a relatively sheltered location, rather than under the severe exposure in the middle of the reservoir.

As completed, the relocated bridge is 1,736 ft. 5 in. long between backwalls. The lift span raises 35 ft. and affords a vertical clearance of 59 ft. 6 in. above maximum reservoir level. The decks of all spans, except that of the lift span, are ballasted.

Engineering Personnel

This project was planned and executed under the general direction of C. E. Blee, chief engineer of the Tennessee Valley Authority, and R. A. Monroe, chief design engineer, with headquarters at Knoxville, Tenn., working in cooperation with R. L. Schmid, chief engineer of the N. C. & St. L., and the firm of Howard, Needles, Tammen & Bergendoff, consulting engineers of New York, acting in behalf of the railroad. The work of relocating the truss spans was performed by the Nashville Bridge Company under the supervision of F. W. Blair, vice-president and construction engineer, and L. O. Hopkins, chief engineer.



Santa Fe Stainless Steel Refrigerator Car Is Placed in Test Service

A general-purpose 40-ton car has greatly improved air-circulating system, convertible ice bunkers, stainless steel sheathing, sliding side doors and other features

THE new stainless-steel refrigerator car, recently built for the Atchison, Topeka & Santa Fe by the Consolidated Steel Company, Los Angeles, Cal., and delivered to the railroad (as reported in a news item in the *Railway Age* of November 23, 1946), is a general-purpose 40-ft., 40-ton car, utilizing water ice as a refrigerant and featured by new-type convertible bulkheads, 6-ft. wide sliding side doors and a materially improved air-circulating system. The car utilizes essentially welded steel construction, has a light weight of 57,200 lb., load limit of 78,800 lb. and other weights and dimensions as shown in the table.

Reverse forced-air circulation is supplied in this car by means of Preco fans, and, for frozen loads, cool air is circulated along the inside of the insulated walls of the car instead of through the load. A lever over each side door operates louvers along the top of the sides extending the length of the car between bulkheads, opening or closing the one-inch air ducts inside the walls and doors. When these louvers are closed the ducts form an additional one-inch dead-air-space insulation along the car sides and doors. Patent applications are pending on the form of louvers which are used at the top of the continuous side ducts.

New Consolidated Steel convertible bunkers installed in this car are a light-weight design and take full advantage of forced air circulation to provide maximum ice surface exposed to the circulating air. They have fewer parts than the conventional bunker, are made of galvanized steel to resist corrosion of water and salt, and afford a simple method for changing from full-bunker to half-bunker icing. They are easily and quickly converted by one man to give maximum lading space when bunker ice is not required and the bulkhead can be moved toward the center of the car and rotated to give access to the ice bunker. The cubic capacity with the bulkheads in is 1,973 cu. ft. and, with the bulkheads out, 2,316 cu. ft.

The Preco fans are driven from the car wheels but, for precooling with the

Consolidated Steel 6-ft. sliding refrigerator-car door closed (left); in toggle position with handle rotated 90 deg. (center); set for sliding open with handle rotated 180 deg. (right)

ice bunkers filled, electric motors can be slipped on mounting brackets to give air circulation in a stationary car equal to the circulation at 50 miles an hour. The fans permit elimination of the conventional ice basket and the contact of air and ice is, therefore, direct. Hot-dipped galvanized steel floor racks, made by the Transportation Specialties Company, are installed.

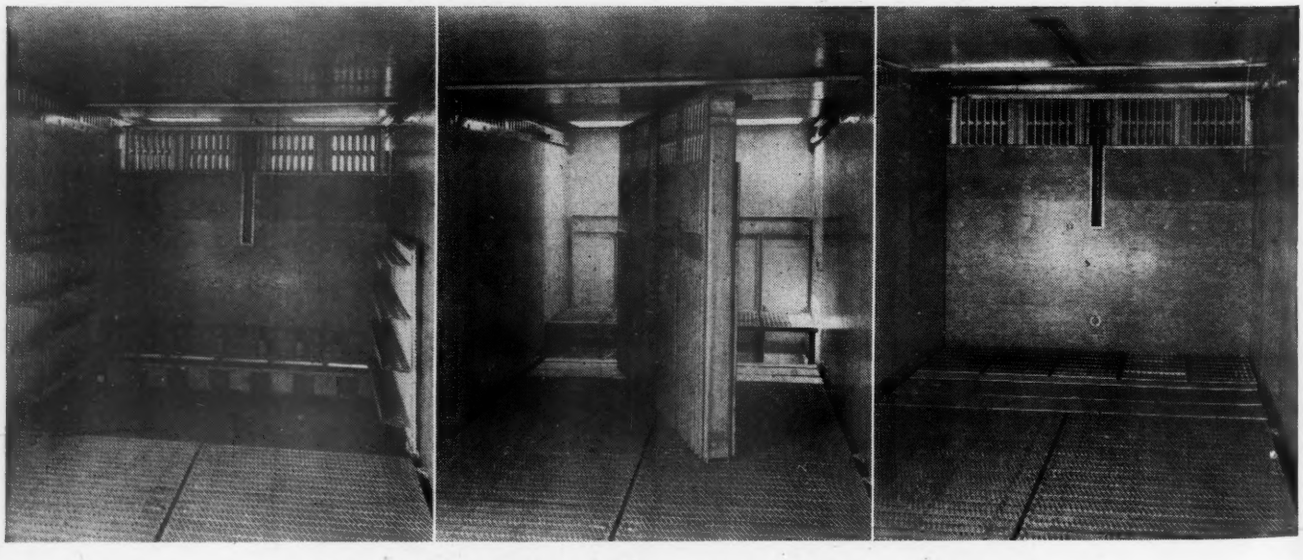
The car is designed to take full advantage of the equipment selected and give maximum circulation of cool air for both frozen and non-frozen loads and precooling needs.

The car underframe includes a center sill, made of Grade A steel (60,000 to 72,000 lb. per sq. in. tensile strength), with Yoloy, a weldable high-yield point, low-alloy steel (2 per cent nickel and 1 per cent copper) used for the bolsters. The center sills are reinforced at the ends by welding plate and bar material to eliminate the usual heavy striker castings. Welded construction is used to achieve maximum strength with minimum weight. The Standard Railway Equipment Company's new cushion coupler carrier and positioning device, is applied, with Miner Type A-22-XB friction draft gears and Type E, 6¼-in. by 8-in. straight-shank couplers.

The side frames of the car are structural-type welded trusses with tension diagonals to take most of the stress off the side sheathing. A hat-section, or channel with flanges on each extended leg for the diagonals, gives added rigidity. Both posts and diagonals are of the same Yoloy steel as the bolsters, for maximum strength per pound and increased corrosion resistance.

Car ends are stainless-clad steel, Dreadnaught-type, made by the Standard Railway Equipment Company. The hot-dipped galvanized roof is a product of the same company.

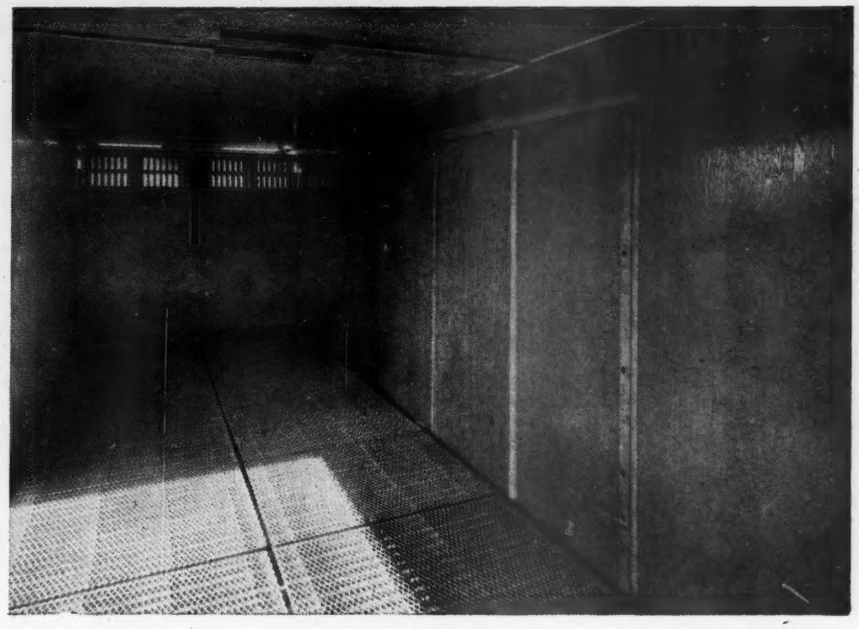
Side sheathing is stainless steel, 18-



Preco bulkhead in place and floor racks raised (left); bulkhead pulled out and rotated (center); bulkhead collapsed (right)

gage, 18 per cent chrome, 8 per cent nickel, cold rolled. To avoid distortion in welding, horizontal ribs were pressed in the sheets. This permitted welding to the side frames relatively thin sheets, on all four edges, by the Union Melt process, without serious wrinkling of the flat surfaces. The welding was done at the rate of about 60 in. per min., with stainless weld rod. The pressed ribs give added rigidity as well as a distinctive appearance.

The insulation consists of blanket and panel-form Fiberglas and Silvercote paper in the sides, ends and roof. The Fiberglas is 5 in. thick at the sides of the ice bunkers and 3½ in. elsewhere. There is an additional ½-in. board form insulation in the roof. The floor has 4 in. of Hairinsul, plus standard Mulehide asphalt construction with 1¾-in. wooden floor between and $^{25}/_{32}$-in. tongue-and-groove beneath. The walls and ceiling are covered with plywood having the edges sealed against moisture. There are two layers of plywood on the sides, with a one-inch air duct or dead-air space between, depending on the position of the louvers.



The Consolidated Steel louvers are open. The top thermometers are visible

Distinctive Door Design

The Consolidated Steel doors are a unique new sliding type which give the same six-foot opening as in a standard box car. Patent applications are pending on this door which uses the well-known toggle principle, permitting great pressure at the side jambs with little manual effort. La Flare-type spring, wood and canvas seals are used. The door construction permits using beveled strips at the vertical edges to lock against the door jambs and resist lateral pressure without interfering with the normal opening and closing.

The sliding door is of two panels hinged at the center. When closed, no part of the fixtures or track extends out as far as existing fixtures on swinging doors. When open, no part extends out from the side of the car as far as swinging doors for smaller openings even when they are hooked to the car side.

Opening and closing operations are simple and require less manual effort than for smaller swinging doors. After the seal and padlock are removed, the end of a bar, or lever, centered in an operating mechanism near the middle of the doors is raised out of the lock and moved outward from the side of the car, rotating horizontally 180 deg. from left to right. The first half of this motion operates the toggles, that is, the two door panels at the central vertical hinge move outward, drawing the door away from the side jambs. The second half of the operating-bar rotation moves the right edge of the right-hand door panel outward so that the panel is parallel to and clear of the side of the car. The end of the operating bar is dropped in a slot on the right panel of the door and the door is ready to slide. Although the two motions are described separately, actually one movement of the handle accomplishes the two operations.

Principal Dimensions and Weights of the Stainless-Steel Refrigerator Car

Length between coupler pulling faces, ft.-in.	44— 9¾
Length over striking castings, ft.-in.	42— 3¾
Width over side ladders, ft.-in.	9—11⅛
Width over side plates, ft.-in.	9— 3¼
Height, rail to running board top, ft.-in.	13— 5½
Inside length, ft-in.:	
Between end linings	40— 5⅜
Bulkheads out	39— 0
Bulkheads in	33— 1¾
Inside width, ft.-in.	8— 2¾
Inside height, ft.-in.:	
Floor to ceiling	7—10 $^{5}/_{16}$
Floor racks to ceiling	7— 2 $^{13}/_{16}$
Truck-center distance, ft.-in.	31— 3¾
Truck-wheel base, ft.-in.	5— 6
Capacity, cu. ft.:	
Bulkheads in	1,973
Bulkheads out	2,316
Ice-box capacity, cu. ft.:	
Full icing	310
Stage icing	164
Car weights, lb.:	
Body weight	42,900
Truck weight (2)	14,300
Total light weight	57,200
Load limit, lb.	78,800

The operator then takes hold of the grab iron at the left of the door and slides the door to the right. The grab iron is free to rotate through a small angle which operates the latch and, through leverage against a striker plate, gives starting impulse to the sliding motion of the door. The left panel will automatically track until it, too, becomes and remains parallel to the side of the car. When the door strikes the buffers the latch automatically locks it until it is manually closed in the reverse operation.

The mechanism of the door consists of relatively few parts and is strongly made. At the bottom is a standard box-car track which carries the main load. The upper track on this experimental car is a formed modified Z-section. The doors are fastened to three vertical rods, to one of which is fastened the operating bar. The rods are connected to the track bearings by horizontal arms at the bottom and top. It is by the rotation of these arms as the rods are turned by the operating lever that the doors are moved in and out of the door opening in the sides of the car. Ball-bearing rollers are used which are packed with grease and triple-sealed against moisture and grit.

Trucks and Brakes

The car is equipped with A. S. F. Type A-3 Ride-Control trucks, with 5-in. by 9-in. waste-packed journals, 33-in. one-wear wrought-steel wheels, Asco journal-box lids, Creco No. 3 brake beams with leveling links, and Royal Type-F slack adjuster. Ajax hand brakes are installed.

The circulating moist-air refrigeration system in this car has been materially improved for a general-purpose car. Modern welding methods and the use of the latest developments in metals permit weight saving without sacrifice of strength. The car design is said to be adaptable to use of considerable amounts of aluminum and other lighter construction to meet any railroad's requirements, if light weight is a major consideration. The new type door is expected to prove adaptable for use on all types of refrigerator cars. It is anticipated that the stainless steel ribbed siding will give long service life as well as attractive appearance.

400-Hp. Narrow-Gage Diesels

THE General Electric Company is completing the last of five special 65-ton, 400-hp., 36-in. gage industrial Diesel-electric locomotives for the Carnegie-Illinois Steel Corporation. These are the largest special narrow-gage locomotives ever built by General Electric.

Operating on some 40 miles of 36-in.-gage tracks at the South Works Plant, features requiring special construction on these locomotives are narrow gage track, limited clearances, and sharp curves. The locomotives will be used on 24-hour service in general switching around the open-hearth furnaces, hauling charge cars and hot ingot cars. Longest trains will consist of 26 ingot-carrying, roller-bearing cars with greatest travel distance about one mile. Maximum trailing train weight to be hauled will be about 1,400 tons on level track, and 535 tons on 1.5 per cent grades.

Geared for a top speed of 25 m.p.h. and equipped with two two-axle trucks of articulated design suitable for operation on 50-ft. radius curves, each locomotive is powered by two Cummins HBIS-600 Diesel engines, nominal rating 200 hp. at 1,800 r.p.m. each. Four GE 733, six-pole, direct-current, commutating-pole, integral double-reduction-geared traction motors, one per axle, provide locomotive drive. All weight is on the drivers.

A special feature of the locomotives, making them eminently suitable for operation on curved tracks in this plant, is the articulated truck design. The couplers are attached directly to the end of the truck frames, and the tractive force of the locomotive is, therefore, confined to the truck members. Tractive force does not have to be transmitted through the centerplate, locomotive platform, and then to the couplers at the end of the locomotive platform as with the conventional non-articulated truck design.

Because the couplers are attached to a relatively short wheel-base truck more nearly like the wheelbase of the cars to be hauled, the displacement of the couplers from the center-line of the track when negotiating sharp curves is much less than on the conventional arrangement. Thus, the direction of the tractive force is more nearly in line with the track when the locomotive is on a curve, resulting in lower thrust of wheel flanges, lower friction, and less tendency to derail. Also, due to the articulated design, the forward truck tends to lead the trailing truck into and out of the curve with minimum shock.

NEW BOOK . . .

History of the British Railways During the War, by R. Bell, 291 pages. 6 in. by 9 in. Bound in cloth, Published by the Railway Gazette, 33 Tothill street, Westminster, S.W.1., London, England. 25 shillings.

It is not often that a reviewer runs across a book so compact, yet comprehensive; so matter-of-fact (in the British manner), yet wholly interesting; so detailed, yet perfectly lucid. Hardly a question comes to mind which is not answered in this well-stocked volume.

Its author retired as assistant general manager of the London & North Eastern in May, 1943, when he was invited by the main-line railroad companies to write this history of the memorable years of World War II.

One of the most useful features of the book for American readers is its inclusion of many tables of full and official financial, traffic and organizational statistics of the British railroads. During the years of the war the British government declined, for security reasons, to publish detailed statistical statements of railroad performance. This was in contrast to the United States, where not only the usual statistics, including carloadings, were made available, but even special studies of the efficiency of transport operations were given to the public in detail.

Naturally, the phase of British war-time operation of most interest to Americans is that of government control, because it offers fertile comparison with their own experience. Just about one year before the beginning of the war the executives of four main-line railroads and the London Passenger Transport Board formed a body advisory to the minister of transport called the Railway Executive Committee, which was not unlike Daniel Willard's Railroad War Board formed upon our entry into World War I. Backed by a score of consultative committees, the R. E. C. got to work immediately in readying the British railroads for whatever might come. Long before the first bombs were dropped, the railroads had in hand complete plans for the evacuation of London's civilian population; blackout provisions graded according to the intensity of enemy action; and techniques for replacing bombed-out roadway structures.

Immediately upon the advent of open hostilities, the R. E. C. became the official agent of the minister of transport, and most orders to the railroads for service cuts, air raid protection and the like were promulgated over the committee's signature. Technically, the R. E. C. had nothing to do with the financial arrangements between the railroads and the government, which were entered into by the railroad corporations themselves. The nature of these arrangements, which were amended from time to time, particularly to deal with the knotty problem of liability for war damage, is already known to readers of *Railway Age*, but they may now learn from Mr. Bell the reasons behind these changes and their ultimate effect. Whatever else may be said, the agreements were immensely profitable to the government, which received surplus profits as follows:

1941	$86,800,000
1942	182,800,000
1943	248,000,000
1944	187,200,000

The R. E. C. did, however, deal with rates. Under an emergency regulation, the minister of transport granted rate increases with reasonable promptness and generosity. In April, 1940, for example, the R. E. C. asked for an all-around 10 per cent boost in rates and fares, which was made effective May 1. In August the committee asked for a further increase to 16⅔ per cent, which was granted effective December 1.

The man-power problem of the British railways was acute, and they were forced to resort to many expedients. For example, early in 1944 about 4,000 additional men were required as firemen in readiness for D-Day. To get them, the railroads departed temporarily from seniority agreements and used as firemen such of its employees as were physically fit. In addition, able-bodied men were loaned to the railways by the Navy and Royal Air Force to act as "stokers." Labor was not only scarce; it became very expensive. During the war the railroads received seven successive claims for all-around increases in wages and salaries. By the end of 1944 payroll costs were 68 per cent greater than they had been when the war began.

Increases in freight traffic on the British railroads paralleled those of our carriers, and passenger traffic increased substantially. To handle this traffic with less equipment than before the war, the railroads were forced to every stratagem of equipment utilization. At the very beginning of the war demurrage penalties were practically doubled and free time for loading and unloading was reduced about half. Shippers refused to cooperate with the new demurrage rules and many of them refused to pay accounts on the new basis. Particular trouble was had with the former owners of private cars (more than one-half million of which were requisitioned by the minister of transport during the war and put under control of the railroads), who claimed that their cars had been a part of their production machinery, "as storehouses on wheels." To meet their protests the railroads devised special "wagon standage schemes."

The virtual isolation of Great Britain from normal sources of supplies gave rise to serious engineering problems. Imports of Baltic pine and of Douglas fir from Canada for ties almost ceased, for example, and it was necessary to use ties cut from home-grown timber. Experiments were made with concrete ties, but their use on running lines was found to be unjustified, and they were relegated to emergency use on sidings.

Shortage of labor and materials made it difficult to keep a high ratio of the limited rolling stock in service. In October, 1945, the peak season of the year for freight traffic, 13 per cent of rail-owned cars and

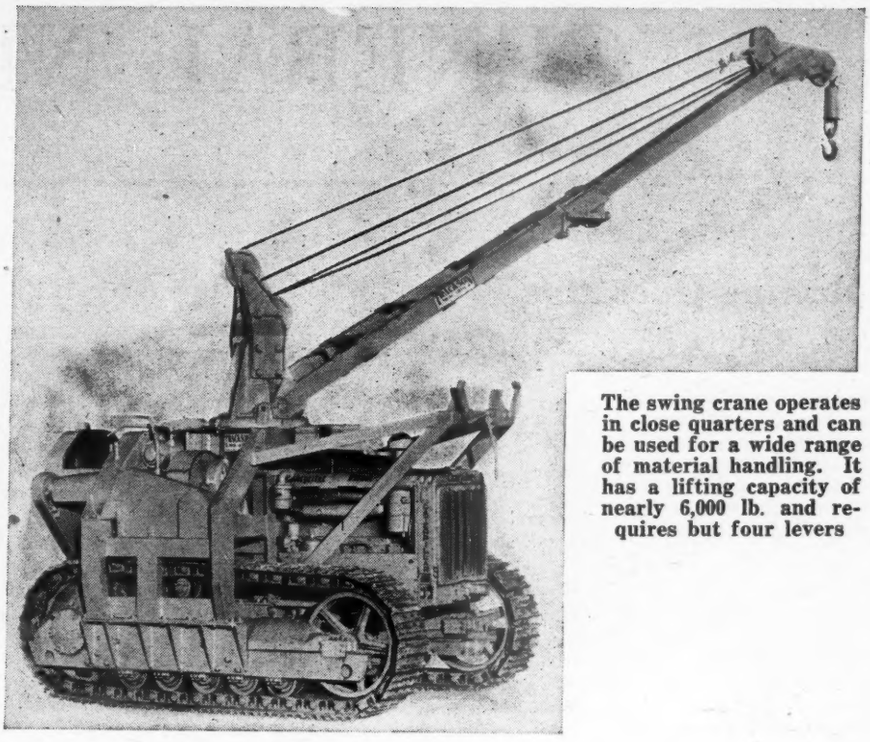
11 per cent of requisitioned cars were awaiting repairs. So numerous did the unserviceable cars become that it was necessary for the roads to convert certain sections of double track to single line and to close some sections altogether to provide track storage for them. The steam railroads were also required to keep in service a large number of obsolete locomotives, according to a unique agreement in which three of the trunk lines assumed the obligation to provide steam power to operate electrified lines of the Southern and the open-air lines of the London transit system, in the event that enemy action interrupted the supply of electric current.

The British railroads also made detailed arrangements for utilizing trunk telephone conduit lines owned by the Post Office, in the event their own were destroyed. Against the breakdown of telephone and telegraph communications, the railways purchased 100 radio sets with a range of 50 miles, some of which were installed at fixed stations and others in rail or road vehicles for instant dispatch to emergency points. At the same time 855 persons were trained in a special new and complex cipher code system so that the radios could be used with entire security. This radio system never had to be placed in service, however.

Expenditures for these and other emergency facilities totaled some $54,000,000 during the war.

Mr. Bell goes into considerable detail on the relations between the railways and the United States forces. The R. E. C. handled all train movements required by the United States army. From September, 1943, to November, 1944, the Transportation Corps was given the use of a Great Western shop for the erection of some 830 locomotives for shipment to continental Europe. The British railways also erected some 667 tank cars for the Americans and assembled scores of flat cars, 32 ambulance cars for the British army and 34 for the American. For its part, the United States army loaned hundreds of freight cars to the British for domestic use until they were needed in continental Europe.

Passenger revenues of the British railroads in 1944 were 88 per cent over the pre-war average; freight train revenues were 117 per cent greater; total operating revenues were 102 per cent greater. At the same time operating expenses were up 90 per cent. Net operating income was 126 per cent higher than the pre-war average.



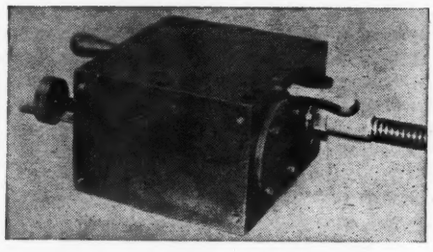
The swing crane operates in close quarters and can be used for a wide range of material handling. It has a lifting capacity of nearly 6,000 lb. and requires but four levers

Mechanical Oscillator

To simulate service conditions for vibration tests of vehicles, bridges, foundations and other structures, the Baldwin Locomotive Works, Philadelphia 42, Pa., has developed the Sonntag LA-1 oscillator, a mechanical device for inducing vibrations for such tests. In use, this machine, which weighs only 61 lb., is attached to the structure or machine to be tested, and is operated by an independent power unit through a flexible-shaft or V-belt drive.

The testing vibration is produced by eccentrically-supported weights which are rotated in such manner that all forces are added in one direction only, eancelling each other in all other directions. The force may be varied in stepless adjustments by turning a micrometer-type knob, and this may be done while the machine is running or stationary. The maximum force which can be developed by the machine itself is 1600 lb., but this, in many cases, is multiplied in resonance with the structure under test. It is said that multiplication factors as high as 200 have been encountered, increasing the force, or load, to 320,000 lb.

This device is described in detail in the manufacturer's Bulletin 202, which can be obtained upon application.



The Sonntag LA-1 oscillator for inducing vibrations in the testing of bridges and other structures

Trackson Swing Crane

A new revolving-boom crane, known as the Model CD4 Trackson Swing Crane, has been announced by the Trackson Company, Milwaukee, Wis. Powered by a "Caterpillar" Model D4 track-type tractor, the crane has a lifting capacity of approximately 6,000 lb. It has only four control levers.

Power is transmitted to the crane mechanism from a rear power take-off shaft of the tractor through a Twin Disc friction clutch, which is independent of the tractor master clutch. Thus, independent power drive is provided for each crane action, including operation of the boom line, the load line and the boom swing. Worm-driven winches for both boom and load lines are said to give full control in raising and lowering and to assure safety and accuracy in all material-handling operations.

The arc of the boom swing is stopped at 300 deg. by an automatic throwout. The boom, of the telescoping type, is adjustable in two-foot steps from 12 to 18 ft. in length. Extension of the boom is accomplished by a crank and cable device, but power retraction is provided.

The tractor on which the crane is mounted has a wide gage and extra-long, non-oscillating track frames, said to afford maximum stability and balance for crane service. The crane frame is supported directly on these frames to prevent any possibility of loading stresses being carried into the engine and transmission.

GENERAL NEWS

Meeting Operating Costs Not Enough

Must maintain railroad credit to avoid socialism, says Roy B. White

"The principle of mutual understanding and good will—which is so generally recognized by our people as essential to the right settlement of international relationships—is equally deserving of our acceptance if a right and lasting settlement is to be made of those paramount domestic problems upon which our own economic well-being depends," President R. B. White of the Baltimore & Ohio declared in an address at Pittsburgh, Pa., on January 28.

Mr. White was speaking before the annual dinner meeting of the Traffic Club of Pittsburgh. He said in part:

"Mutual understanding and good will is a great and pressing need today in effecting the adjustments in individual, in national, and in international relationships if our future well being as citizens and as a country is to continue."

Among problems now facing industry in general, including the railroads, Mr. White listed the harmonizing of the interests of labor and management. Of equal importance, he declared, is "the problem of securing that balance between income and outgo in the industry of regulated rail transportation that must be secured if the public is to continue to be supplied with the type of rail transportation industry requires."

"Labor" Has Matured—"There is no fact of greater political and economic significance in the past generation of this country than the unprecedented growth in the organization and power of labor," Mr. White added. "To the growth of the organizations for the purpose of bargaining collectively with the management of industry, there can be no sound objection. But it is the lesson of all history that power that knows no restraint or control save only the will of those who possess it is a dangerous thing. Labor has matured and come of age for faster than did industry. Whatever formerly may have been labor's disadvantage in size or power in its dealings with industry, there is none such today.

"The principle of good will and mutual understanding requires that each of these great forces, having attained the strength and virility of full manhood, should now, willingly or otherwise, if need be, assume the responsibilities to itself and to society that attach to man's estate. Unless this is done there can be, in the very nature of things, no equality at the bargaining table.

"But lip service to the idea of equality of bargaining power will not create such equality. There is no reality to the claim of equality at a conference table or elsewhere when industry is bound by certain basic laws of our country while labor is expressly exempt from similar laws. Such discrimination and preferences preclude equality.

"What both labor and industry now so sorely need for their own welfare is surcease from strife. It is wasteful and destructive. We do not want to continue to destroy—we want to build and grow—to produce and have.

"What greater economic blessing could come to this country, what greater boon could there be to labor's own self-interests, than an honest, old-fashioned opportunity for all of us to work continuously in this country for a long period and avoid the losses which are inherent to interruption?"

Credit Must Be Restored—Discussing inadequate railroad revenues, Mr. White warned that unless sufficient income were received to counterbalance increasing railroad expenses, "the benefits of private management of railroad service will inevitably be lost both to the public and to railroad labor." He added that the lack of balance between income and outgo is materially affected by unfair and discriminatory treatment of the railroads in comparison with other transportation agencies. Pointing out that the government plans to spend nearly $800 million this year to build and maintain airports, air navigation facilities and services, waterways and highways, Mr. White added, "The service that is offered by these other carriers thus favored is artificial and uneconomical. It is so, because it is made available to those who use it at rates less than its full cost, while the taxpayers at large, many of whom do not use the service, pay for the balance of the cost in the facilities they provide out of the public treasury."

He warned that the recent rise in rates for railroads will provide only partial relief, and added:

"However helpful the authorized rate increase is, it does not accomplish the balance of income and outgo upon which adequate privately managed railroad service is dependent. In fact, the anticipated additional revenue to be derived from this rate increase will amount to less than one-half of the increased costs since 1939. I fear that the sufficiency of the rate increase is too likely to be measured by its ability to cover only out-of-pocket increases in operating costs, and that its inability to provide returns on railroad investment necessary to restore and retain railroad credit has not been given the deserved consideration its importance demands.

Nation's Economy Imperiled—"It is

(*Continued on page 284*)

Shippers Describe Box Car Shortage

Blame I.C.C., A.A.R., O.D.T. for lack of equipment to move record harvest

Representatives of the Interstate Commerce Commission and the Office of Defense Transportation were expected to reply on January 30 to charges of western grain shippers that, together with the Car Service Division of the Association of American Railroads, they are jointly responsible for the shortage of box cars. The shippers' allegations were expressed earlier this week at a hearing before a subcommittee of the Senate committee on interstate and foreign commerce on Senate Resolution 47, calling for an inquiry into the box car situation, which was proposed by Senator Reed, Republican of Kansas, the chairman of the subcommittee.

The Car Service Division's presentation was not expected to be made until February 11. W. C. Kendall, chairman of C. S. D., informed the committee on January 28, the opening day of the hearing, that he needed "about two weeks" in order to compile and submit to the committee "complete information" with respect to the box car shortage. He denied emphatically that he was asking for the delay as "an excuse" to avoid the issue.

Scott Speaks for Shippers—The shipper presentations generally were along the lines of that made by Walter R. Scott, executive vice-president of the Board of Trade of Kansas City, Mo., who told the committee that none of the agencies (I. C. C., O. D. T. and C. S. D.) having authority over the distribution of cars has "apparently been willing to admit that the recent car shortages have been due to the dislocation of cars" nor that "steps should be taken to keep the cars in balance in relation to their ownership."

"It will be observed," he continued, "that the Car Service Division has plenary power to 'transport cars from one railroad or territory to another when necessary to meet traffic conditions, with due regard to car ownership and requirements' and in other respects also, including the supervision of the application of car service rules. The car service rules provide that foreign cars are to be forwarded to or in the direction of the home road, loaded or empty. . . . There is no lack of power in the Car Service Division to maintain on the western grain carrying lines a car supply equal to their ownership. However, it should be noted that when as a result of

pressure the Car Service Division has issued orders to move empty cars from the eastern territory to western lines it has been difficult to secure obedience. Actually, instead of having plenary power, it appears that the orders of the Car Service Division depend largely upon the acquiescence of the roads to which they are directed."

Declaring that the C. S. D. does not concede that "as an accepted practice the eastern lines should be required to deliver the cars to the western lines to restore ownership" and that the "stock answer" of the C. S. D. to complaints of the lack of cars for grain loading in the West is that "there is a shortage of cars for loading everywhere," Mr. Scott said that "in short, it appears that the Car Service Division has not been willing of its own motion to require the necessary movement of cars to the West, that it has issued such orders only as the result of great pressure, and that in such events it has difficulty in securing obedience to its orders."

Sees Eastern Roads Dominant—"The Car Service Division is an agency of the Association of American Railroads, which is reputed to be dominated by the powerful railroad systems of the East," he asserted. "These systems do no voluntarily deliver up empty cars to the western lines, and it is hardly to be expected that the Car Service Division is in position to compel them to do so."

With respect to the O. D. T., Mr. Scott said that "so far as I am aware" Colonel J. Monroe Johnson, its director, "has never felt that there was any merit in the complaints which arise from the West in these periods of car shortages," adding that Colonel Johnson "apparently accepts the views of the Car Service Division and answers that cars are short everywhere." Mr. Scott said he knew of no order issued either by the O. D. T. or the I. C. C. requiring cars to be given up by the eastern lines to the western lines in order to restore a fair balance of ownership or providing for an even flow of cars to the West.

"The Office of Defense Transportation . . . was created by the President as a war measure," he added. "The war is long since over but the office persists. I respectfully suggest that in matters of car service the responsibility and power should be returned to the Interstate Commerce Commission."

Referring to the I. C. C., Mr. Scott said that the commission displayed "great concern" over the car shortages of 1906 and 1916-1920, during which periods, he said, the I. C. C. instituted formal investigations, labored to bring about some relief and sought and secured extraordinary powers to deal with such situations.

"The commission's attitude toward the present series of car shortages is in marked contrast," he continued, "It has stood aloof, showing no activity, and its annual reports are bare of any reference to the subject. Its great powers are exercised only at the behest of another. The commission is the forum to which shippers are accustomed to resort, and it is regrettable that the present condition exists. It should be said, however, that it seems probable to an outsider that the commission holds the view that the intention of the President was to transfer the responsibility, and with it in practical effect its powers, to the director of the Office of Defense Transportation."

Would Make a Law—In conclusion, Mr. Scott said that the committee should "consider" legislation which would result in either the adoption of a recommendation made in 1917 by the I. C. C. requiring the posting and filing of the car service agreement under Section 6 of the Interstate Commerce Act or an amendment to Section 1 of the act "to declare a legislative policy that the ownership of railroad cars be respected and that lines upon which cars are unloaded b required to return such cars or an equivalent number to the originating carrier, subject to the power of the commission as an affirmative action and for good cause appearing to depart as may be necessary to meet special conditions."

Among other things, Mr. Scott also observed that (1) similar box car shortages may be anticipated over the next two or three years "unless something is done to correct the conditions which cause them"; (2) on January 1, the western grain-carrying lines were short more than 40,000 box cars in relation to their ownership of such cars; (3) a total of 1,021,757 box cars were in service at the end of 1916 as compared to 741,946 at the end of 1945; (4) the prospect for building up the nation's car supply does not "at this time" appear very "promising"; (5) the per diem and car service agreements are effective in ordinary times to secure the return of cars, "but in such times as we are now experiencing the cars do not return automatically"; (6) the "trifling" per diem charge of $1.15 per day under existing conditions is "absolutely meaningless" and cannot be considered "just compensation" for the use of cars which the western lines have not agreed to but which "the eastern railroads take because they have possession of the cars"; (7) eastern railroads have no right to "pirate" box cars for their own use; and (8) since the western lines' cars move loaded into the East in excess of the number received loaded from eastern lines, "there must of necessity be a delivery of cars empty off the eastern lines, for otherwise the car supply could never be restored."

Call Rule Enforcement Lax—Senator Reed said that he doesn't want to enact legislation if it is possible to avoid doing so, but that legislation may become necessary if the railroads are "unwilling and unable to control the box car situation." He added that it was "about time that we did something permanent about it." Noting that present hearing, which he hopes to make "thorough and complete," was the third in three years in addition to numerous conferences on the box car situation, Senator Reed said that neither the railroads nor the I. C. C. "observe or enforce" the C. S. D. rules. He also asserted that (1) approximately 75 per cent of the cars that are being returned to western roads are unsuitable for grain movement; (2) the balance of cars moving east and west should be preserved; (3) the present supply of approximately 700,000 box cars is inadequate; (4) the I. C. C. has "neglected" the box car situation; and (5) there was no reason for the shippers being put to additional expense by having to forward their respective products by truck.

Confining most of his remarks to an introductory statement at the outset of the hearing, Senator Reed at the same time

A. A. R. Moves to Reduce Empty Box-Car Mileage

Box cars are bodly needed on all lines, particularly western railroads, and the Mechanical division of the Association of American Railroads announced on January 20 modifications in interchange Rules 1 and 2 which are designed to reduce empty mileage and loss of car-days under certain conditions. The changes will be effective during the present emergency and until rescinded.

The new policy to be followed by all roads applies to the handling of bad-order plain box and automobile cars, including those received on Car Service division orders and not yet accepted in interchange, but not including automobile rack and parts cars and ventilated box, as follows:

(1) Plain box or automobile cars, empty on line, at other than a junction point with owning railroad having defects which render them unfit for loading shall not be carded to home shops when they can be made serviceable for rough freight or better at a cost for body repairs (exclusive of repairs to couplers, draft rigging and air brakes) not to exceed $100 for labor and material.

(2) Plain box or automobile cars, empty on line, at a junction point with owning railroad (either direct physical connection or through an intermediate belt or switching road) having defects which render them unfit for loading shall not be carded to home shops when they can be made serviceable for merchandise or better at a cost for body repairs not to exceed $50 for labor and material (exclusive of repairs to couplers, draft rigging and air brakes) and when it is not necessary to order repair material from owners.

(3) Box car movement orders issued by the Car Service division require that cars applied on such orders be serviceable for loading. Cars applied on such orders shall, so far as practicable, be inspected by mechanical department forces of originating roads and those not suitable for loading should not be applied.

(4) Plain box or automobile cars shall not be carded home as unfit for loading account requiring repairs in excess of amounts specified in Items (1) and (2), until personally inspected and authorized by the car foreman.

placed in the record two exhibits compiled from A. A. R. car service figures. One of the exhibits showed first-of-the-month and mid-month percentages (from September 1, 1946, to January 15) of cars on line to cars owned for six eastern and five western roads. The January 15 figures showed that the percentages for the eastern roads ranged from the Erie's 98.8 per cent to the New York, New Haven & Hartford's 336 per cent, the Erie figure being the only one of the six eastern-road percentages which was under 100. Meanwhile none of the five selected western roads had on its lines January 15 cars equivalent to 100 per cent of its ownership, the range there being from the Chicago, Burlington & Quincy's 61.3 per cent to the Union Pacific's 98.7 per cent.

East-West Flow of Empties—The other Reed exhibit showed the daily movement of empty cars westward through Chicago and St. Louis gateways from September 1, 1946, through January 25. The January total through the 25th was 33,368 cars, higher than any of the four previous full-month totals except December's, which was 38,734. January's daily average, however, was running only 8 cars under December's—1,283 cars as compared with 1,291.

According to the subcommittee chairman, he sent a telegram to the I. C. C. on November 23, 1946, in which he requested that agency to "take action" with respect to enforcing the car service orders and expediting the movement of empty cars, but he never received a reply. Senator Reed also said that the western railroads, because of their shippers' demands, "build better box cars and keep them in better shape."

Another member of the subcommittee, Senator Capehart, Republican of Indiana, noting that "we all know there's a box car shortage," asked, "What's going to be done about it?"

"We'll have Car Service Division officials up here to explain that," Senator Reed replied.

Senator Wherry, Republican of Nebraska, stated that some corn elevators in Nebraska have been receiving only one empty car a day "when ten were needed."

One of the shipper witnesses, E. W. Reed of Salina, Kans., told Senator White, Republican of Maine, that the slow return of empty cars to the West was because the "eastern roads hold the empties in the East after they have been unloaded despite the fact that the West is the surplus loading area." The witness added that most shippers were operating on a "day-to-day" basis, that the eastern roads were returning many bad-order and "rough" box cars to the West and that the A. A. R., the I. C. C. and the O. D. T. were "more interested" in the eastern railroads and shippers than those in the West. He also urged the unloading of cars on week-ends and the immediate return of equipment built and owned by western roads to those carriers. He said further that the state of the box car construction program was a "disgrace" as compared to the nation's production record during World War II.

It had been expected that R. V. Fletcher, president of the A. A. R., would be the first witness at the hearing and he was on hand prepared to make a brief preliminary statement of the A. A. R. position. Senator Reed, however, said that the first railroad witness should be able to answer the specific charges made against the C. S. D. and suggested that Judge Fletcher would perhaps not be prepared to do so. The A. A. R. president agreed and left the hearing room.

Coal Cars, Too—It also was announced by Senator Reed that hearings on Senate Resolution 44, pertaining to the investigation of coal car shortages, would start on February 5 before the subcommittee. The resolution, which calls for a "full and complete study and investigation with respect to the adequacy of the supply of railroad cars in the West Virginia coal-mining areas and with respect to the reasons for any inadequacy of such supply," is sponsored by Senator Revercomb, Republican of West Virginia, as noted in *Railway Age*, January 18, page 207.

C. H. Quinn Establishes N. & W. Scholarship at Purdue

Charles H. Quinn of Los Angeles, Calif., former chief electrical engineer of the Norfolk & Western, has established a Norfolk & Western scholarship at Purdue university. Only employees of the railroad and members of their immediate families are eligible for the scholarship, which will provide the recipient with $500 annually for four college years. Details regarding eligibility, qualifications and competitive examinations will be announced later.

Mr. Quinn was graduated from Purdue in 1899 and in the next year was appointed an instructor in the university's school of electrical engineering. He joined the Norfolk & Western in 1901. First employed in the drafting department of the mechanical engineer's office, he was later advanced to electrical foreman, assistant engineer (motive power) and chief electrical engineer, serving in the last position until his resignation in 1923. Mr. Quinn is chairman of the board of the Electrical Products Corporation; vice-president of the Basin Oil Company and a member of the advisory committee of the board of directors of the Bank of America.

U. P. Begins System-Wide Claim Prevention Program

With the theme "every claim payment represents a transportation failure and a dissatisfied patron," the Union Pacific has inaugurated a system-wide freight loss and damage prevention program which provides for the participation of conductors, switchmen, yardmasters and many other classes of employees. The program, believed by the road to be the most comprehensive of its kind ever undertaken, is based on the cooperation of every railroad employee associated with the loading, movement and unloading of freight.

As outlined by O. J. Wullstein, general freight claim agent, at a recent meeting of the reads of the company's operating, traffic and freight claim departments at Salt Lake City, Utah, the plan provides for loss and damage prevention committees on all subdivisions and one for each division. Membership of the subdivision committees, which will meet once a month, includes agents, conductors, engineers, yardmasters, car foremen, roadmasters, special agents, freight service inspectors, switchmen, engine foremen, watchmen, warehouse

Union Pacific Leaders Hold Claim Prevention Meeting

The new system-wide loss and damage prevention program of the Union Pacific was launched recently at a meeting of 32 operating, traffic and freight claim officers at the Hotel Utah, at Salt Lake City, Utah. They are: seated left to right, L. A. Collins, general manager, Portland, Ore., H. H. Larson, general manager, Omaha, Neb.; B. W. Hanson, traffic manager, Salt Lake City; F. C. Paulsen, general manager, Salt Lake City; W. J. Morrison, superintendent, Salt Lake City; O. J. Wullstein, general freight claim agent, Omaha; P. J. Lynch, vice-president in charge of operations, Omaha; F. H. Knickerbocker, executive assistant, Salt Lake City; W. T. Price, traffic manager, Los Angeles, Cal.; E. Marksheffel, general superintendent, Salt Lake City; J. F. Lewis, superintendent, Denver, Colo.; C. W. Evers, traffic manager, Portland; H. G. Pelletier, general agent, Salt Lake City. Standing, left to right, Elgin Hicks, superintendent, Cheyenne, Wyo.; A. D. Hanson, general superintendent, Salt Lake City; R. E. Edens, superintendent, Ogden, Utah; O. A. Durrant, trainmaster, Ogden; A. K. McNeill, superintendent of transportation, Salt Lake City; A. E. Stoddard, assistant general manager, Cheyenne; L. J. Grinnell, district freight claim adjuster, Denver; W. R. White, container engineer, Omaha; A. G. Brown, freight service inspector, Los Angeles; F. H. Barnes, freight service inspector, Salt Lake City; J. L. Payne, traveling freight claim adjuster, Salt Lake City; H. F. Davis, supervisor of loss and damage prevention, Omaha; J. P. Johnson, freight service inspector, Los Angeles; J. A. Nelson, freight claim agent, Salt Lake City; O. W. Gray, freight service inspector, Portland; R. E. Carlson, assistant freight claim agent, Los Angeles; E. F. Freeberg, freight service inspector, Omaha; C. W. A. Maloney, freight claim agent, Portland; J. R. Morrison, freight service inspector, Omaha.

foremen, claim supervisors and yard clerks.

Management representatives will not be included on the subdivision committees in order that more vigorous discussions may be encouraged, Mr. Wullstein stated. Meetings will be rotated from point to point on the subdivision; will be held during the working day, and all operating personnel who can be spared from their jobs will be allowed to attend on company time. Committee appointments will be changed from time to time.

The division committee will be composed of management and employee representatives, who will meet every two months. At that time, a general discussion will be held, and ideas and suggestions from the subdivision committees will be discussed. If passed upon, they will be put into effect immediately.

In outlining the plan, Mr. Wullstein said that freight claims on the railroads hit $80,000,000 last year, which is "money down the sewer" that could be paid for wages and additional improved equipment and facilities. He pointed out that the program's two objectives are: (1) to conserve revenue; (2) to improve service.

Fencing Wire Derails Train

Three passengers and one employee were killed and 17 other persons were injured in the derailment of the Pennsylvania's train from Cincinnati, Ohio, and Columbus to Chicago, the "Union", at Walton, Ind., shortly before 6 p.m. on January 27. The locomotive of the eight-car train was overturned, and six cars left the rails but remained unright.

According to officers of the Pennsylvania, the derailment was caused by a large roll of wire fencing which was struck by the locomotive and was pushed ahead of the train until it become lodged in the heel of a switch. The fencing roll was one of a group which had been left standing on end at a point 27 ft. east of the track. The ground between the track and the point where the fencing had been stored is level.

Says Political Rate-Making Can Cause Commercial Chaos

Declaring that "the times are, if anything, more critical for private enterprise in transportation, especially in railroading, than in the other segments of the economy," Edwin H. Burgess, vice-president and general counsel of the Baltimore & Ohio has called for the support of shippers and of industry in general to avert political and economic developments which will make the survival of privately-controlled railroads increasingly difficult. He spoke January 23 at the annual "railroad night" of the Port of Philadelphia (Pa.) Maritime Society.

For example, he said, attempts of the Anti-trust Division of the Department of Justice to upset the conference method of determining railroad rates can cause "commercial chaos." Mr. Burgess also emphasized that the recent rise in freight rates granted by the Interstate Commerce Commission had not solved the revenue requirements of the railroads.

In regard to the anti-trust action, he stated that the railroads face the problem of determining "whether they are to continue to be regulated by the time-tested Interstate Commerce Commission in line with the standards that are named in the Interstate Commerce Act, or by the Department of Justice as a 'super-regulator' acting according to its notions as to how the anti-trust act should be enforced."

Rail Advertising Agents Elect Officers at Chicago

A. A. Dailey, general advertising manager of the Atchison, Topeka & Santa Fe System, was reelected president of the American Association of Railway Advertising Agents, at the organization's annual meeting on January 17 and 18, at the Union League Club in Chicago.

Subjects discussed at the meeting included the standardization of time tables, budget account, magazine and newspaper schedules, production and distribution of travel literature, travel show exhibits, motion picture travelogues and readership checks on advertisements. Harold W. Snell, assistant general manager of the Alaska, gave the principal address on "Travel in Alaska."

Also reelected as vice-presidents were: S. E. McKay, advertising agent of the Baltimore & Ohio, Baltimore, Md., and H. B. Northcott, general advertising manager of the Union Pacific, Omaha, Neb. Mac G. Collins, advertising manager of the New York Central System, New York, was elected as an additional vice-president. Other reelected officers were: treasurer, A. W. Eckstein, advertising agent of the Illinois Central System, Chicago; secretary, E. A. Abbott, Evanston, Ill.; and assistant secretary, C. D. Perrin, Chicago.

Seatrain Resumes Coastal Runs

Seatrain Lines has announced it will resume its coastwise operations between New York and New Orleans, La., and Texas City, Tex., on or about March 12. Weekly sailings will be made in each route in both directions. The four Seatrain vessels which were reconverted from war use are ready for service and the new terminal at Edgewater, N. J., is nearing completion. Sailing schedules will be issued in the near future, the announcement said. The company recently announced it would not resume its service to Cuba until regulations involving wages and working conditions, recently put in effect along the Cuban waterfront, were eliminated.

Awards of $2,000 to Be Made in R. W. M. A. Contest

The Resistance Welder Manufacturers' Association has announced that $2,000 in prizes will be awarded in 1947 for outstanding papers dealing with resistance-welding subjects. Contest judges will be appointed by the American Welding Society, and awards will be made at the 1947 fall meeting of the society.

One prize of $750 will be awarded for the best paper emanating from an industrial source, consulting engineer, private or government laboratory, or the like, the subject of which is concerned specifically with resistance welding. A prize of $500 is offered for the second best paper from an industrial source, and a prize of $250 for the third best paper.

A prize of $300 will be awarded for the best paper emanating from a university source—that is, either an instructor, student or research fellow—which, in the opinion of the Board of Awards, is the greatest original contribution to the advancement and use of resistance welding; and a prize of $200 for the second best paper from a university source.

The contest is considered to have opened August 1, 1946, and will close at midnight, July 31, 1947. Papers entered in the contest should be sent to the American Welding Society, 33 West Thirty-ninth street, New York 18. The minimum length requirement for papers entered in this competition is 2,500 words.

A. R. C. I. Officers Reelected

S. M. Felton was reelected president of the American Railway Car Institute at the recent annual meeting in Chicago. W. J. Curley, vice-president of the General American Transportation Corporation, and R. A. Williams, vice-president of the American Car and Foundry Company, were reelected vice-presidents of the institute and W. C. Tabbert was reelected secretary-treasurer.

C. & O. Issues Credit Cards

The Chesapeake & Ohio inaugurated its credit card and "charge-it-as-you-go" ticket-selling plan on January 27. Credit card No. 1 was issued to Attorney General Tom C. Clark in New York. The next two cards were issued to Governors William M. Tuck of Virginia and Clarence W. Meadows of West Virginia. At the same time, 34 other credit cards were presented to mayors and newspaper publishers and editors in cities along the C. & O. line.

New "Empire Builders" Begin Service on February 23

Daily, 45-hour service between Chicago and the Pacific Northwest cities will be inaugurated on February 23 by the new, streamlined "Empire Builders" of the Great Northern and the Chicago, Burlington & Quincy, F. J. Gavin, president of the G. N., announced this week. The trains, four of which were purchased by the G. N. and one by the C. B. & Q., at a total cost of $7,000,000, will cut 13½ hours from the present schedules, Mr. Gavin stated. (For details of the trains, see *Railway Age* of December 7, 1946, page 968).

The westbound train will leave Chicago's Union station daily at 1 p.m. over the Burlington and arrive at St. Paul, Minn., at 7:45 p.m. and Minneapolis, Minn., at 8:25 p.m. The "Empire Builder" will arrive at Spokane, Wash., at 11:30 p.m. the following day, at Seattle, Wash., and Portland, Ore., simultaneously the second morning at 8 o'clock.

Eastward the train will leave Seattle and Portland at 3 p.m. daily; Spokane at 11:15 p.m.; Minneapolis, 6:35 a.m. the second day; and St. Paul, 7:15 a.m. It will arrive at Chicago at 2 p.m. The present "Empire Builders" will be redesignated the

"Oriental Limited," and will be continued on approximately the present schedules. The new trains beginning service on February 23 will make connections for the line from Havre, Mont., to Great Falls, but will not serve Glacier Park, Mont., the road stated.

One of the streamliners will be on public exhibition at Chicago's Union station on February 7. On the same date another set of equipment will begin a 13-day exhibition tour, including six states and British Columbia. Stops will be made at the following points during February: St. Paul, 7th; Minneapolis, 8th; Duluth, Minn., and Superior, Wis., 9th; Fargo, N. D., and Minot, 10th; Great Falls, Mont., and Whitefish, 11th; Spokane, 12th; Portland, 14th; Tacoma, 15th, Seattle, 16th; Wenatchee, Wash., and Everett, 17th; Vancouver, B. C., 18th; and Bellingham, Wash., 19th.

The sleeping car equipment to outfit the new "Empire Builders," is described by its builder, the Pullman-Standard Car Manufacturing Company, as the first such equipment built since the war.

"City of Portland" to Begin Daily Service February 15

Streamliner service between Chicago and Portland, Ore., will be inaugurated on a daily basis on February 15 by the Union Pacific and the Chicago & North Western, G. F. Ashby, president of the U. P., announced this week. Under the new schedules, the streamliner, "City of Portland," will leave Chicago at 4 p.m. daily and arrive at Portland at 8 a.m. the second day, Mr. Ashby said. The eastbound train will leave Portland at 5:30 p.m., with arrival at Chicago the second day at 1.10 p.m.

Each train will offer sleeping car accommodations, including drawing rooms, compartments, bedrooms, roomettes and berths, and reserved seat accommodations in coaches of the most modern design, he stated.

R.R.s Testing Improvements as Passenger Traffic Boosters

The railroad industry is embarking on a thorough-going campaign to test how great a volume of passenger traffic can be built up through providing the public with maximum comfort and convenience, George A. Kelly, executive vice-president of the Pullman Company, declared in an address before the St. Louis Electrical Board of Trade at the Statler hotel in that city on January 21.

The speaker said that the railroads are determined to find out how large the railroad passenger traffic can be in peace-time under competitive conditions if it is made really attractive, and whether such service can be provided, while still leaving a satisfactory margin of profit above expenses. He asserted that railroad passenger service, under favorable conditions, has shown the ability to gross over two billion dollars annualiy, and "no such volume of potential business will be lightly discarded without a struggle both to hold the volume and to find means of making it yield a satisfactory net."

Discussing methods used by the railroads to increase their traffic volume, Mr. Kelly pointed out that, in addition to the installation of modern lightweight equipment, the railroads are improving operating procedures and rehabilitating, and developing their properties. He said that extensive programs for training employees in friendly service and improved dining car service have been launched. Appealing advertising and modern merchandising methods, including improved procedures in reservation bureaus and ticket offices, will be used to attract passengers to rail travel, he declared.

The Pullman officer said that, while the

Judge Fletcher Demands Fair Legislative Treatment

Fair treatment for the railroads at the hands of Congress was asked by R. V. Fletcher, president of the Association of American Railroads, in an address January 23 at the dinner of the Baltimore Advertising Club's Marketing Conference at the Sheraton-Belvedere hotel in Baltimore, Md. In urging passage of the Bulwinkle Bill now pending in Congress, Mr. Fletcher declared that unless the railroads are permitted to confer between and among themselves and with shippers in regard to rates and services, "chaos will prevail in the transportation industry."

"The shippers of the country are unanimous in their belief that conferences and consultations among railroads and shippers are essential to an orderly rate structure," he said, adding that the right to confer and agree upon rates has been accorded the air carriers and the water carriers engaged in foreign commerce, and the railroads are asking only for the same privilege.

Contending that there is a great need for reform in the matter of taxes imposed upon the railroads for employee benefits, Mr. Fletcher continued:

Cost of "Social Security"—At the present time, the railroads pay three per cent upon their payrolls for unemployment insurance, and this at a time when there is a minimum of unemployment in the railroad industry. As a result of this law, which has been several years in effect, there is accumulated in the Treasury some $800 million, for which there is no use whatever in relieving unemployment.

"The railroads have long insisted that Congress should amend the law so as to reduce the rate of taxation to one per cent, as long as the reserve remains above $100 million. If it falls below that figure, the law should provide for a sliding scale of increase in payments in order that the reserve might always be kept at a point where the system is solvent. But to allow $700 million of useless money to lie in the Treasury in a fund which is constantly increasing amounts to an absurdity which should be corrected."

Judge Fletcher went on to say that there is also a need for a simpler method of reorganizing railroads along the lines provided in the Mahaffie Bill; changes in the regulatory statutes so that all forms of transportation would be regulated by the same authority, and provisions that government expenditure for subsidized forms of transportation should be authorized only after the economic necessity of such expenditures is approved by the Interstate Commerce Commission.

"If the railroads can secure fair treatment at the hands of Congress, if there is peace in the field of labor relations, and if there is the full production which all students of the subject now predict, the railroads should emerge from the year 1947 with a fair record of performance and earnings," he said. "It is highly important that railroad credit should be improved. I am hopeful that the year 1947 will strengthen rather than weaken such credit, so that there may be available to take care of needed improvements a fair supply of capital, provided not by the government but from private sources."

The A.A.R. president commented that "it is by no means certain that the recent increase in railroad freight rates will be sufficient to absorb the increase in the cost of labor and materials."

Cars Not Only Scarce Item—Speaking of the present freight car shortage, he called attention to the fact that the railroads are currently meeting about 90 per cent of the demands for freight service. "This is a fairly high percentage," he stated. "I suspect that people would be quite well satisfied if they could get 90 per cent of all the automobiles they order and that percentage of sugar, rice and other scarce items." The principal reason for the present car shortage, he explained, is that, due to labor difficulties and the lack of materials, the railroads have not been able to get the cars they need. Moreover, he added, the movement of cars has been considerably slowed down by industry's adoption of the five-day week, thereby lengthening the turn-around period substantially.

Mr. Fletcher declared that the outlook for a better car supply has recently improved, and car manufacturers are now assured of more materials than have lately been furnished. If materials could be obtained to enable the car-builders to turn out 10,000 new freight cars a month, the situation would get better rapidly, he added.

railroads welcome fair competition and equality of opportunity, "some of them are getting tired of air line operators boasting of reducing their fares, and providing free meals and other frills for their passengers, but not bothering to explain to the public why they can do this." He attacked air line subsidies, declaring that over a billion dollars of taxpayers' money already has been spent on civil airports, and in the next seven years it is planned to spend another billion dollars for these airports.

Freight Car Loadings

Loadings of revenue freight for the week ended January 25 totaled 821,965 cars, the Association of American Railroads announced on January 30. This was a decrease below the previous week of 6,096 cars, or 0.7 per cent, an increase of 113,410 cars, or 16.0 per cent, above the corresponding week last year, and an increase of 62,339 cars, or 8.2 per cent, above the comparable 1945 week.

Loading of revenue freight for the week ended January 18 totaled 828,060 cars, and the summary for that week as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For the Week Ended Saturday, January 18

District	1947	1946	1945
Eastern	162,785	152,187	146,552
Allegheny	173,777	156,494	164,969
Pocahontas	66,748	56,838	54,044
Southern	133,885	120,371	126,406
Northwestern	90,665	85,713	85,396
Central Western	135,613	122,558	127,936
Southwestern	64,587	55,282	72,269
Total Western Districts	290,865	263,553	285,601
Total All Roads	828,060	749,443	777,572
Commodities:			
Grain and grain products	57,955	54,924	46,027
Livestock	18,071	11,035	15,411
Coal	194,669	184,694	172,253
Coke	14,296	10,071	15,135
Forest products	41,703	32,897	39,111
Ore	12,737	9,473	11,907
Merchandise l.c.l.	116,318	117,389	98,021
Miscellaneous	372,311	328,960	379,707
January 18	828,060	749,443	777,572
January 11	830,945	772,888	783,060
January 4	687,428	652,978	683,398
December 28		627,967	505,977
December 21		836,181	687,845
Cumulative total, 3 weeks	2,346,433	2,175,309	2,244,030

In Canada.—Car loadings for the week ended January 18 totaled 71,894 cars, as compared with 71,219 cars for the previous week and 67,912 cars for the corresponding week last year, according to the compilation of the Dominion Bureau of Statistics.

Totals for Canada:	Revenue Cars Loaded	Total Cars Rec'd from Connections
January 18, 1947	71,894	30,051
January 19, 1946	67,912	34,529
Cumulative totals for Canada:		
January 18, 1947	193,568	100,130
January 19, 1946	188,140	96,791

Diesel Economy, Reliability Stressed by Osborn

Many railroads are headed toward complete Dieselization of their lines, and others will Dieselize most of their divisions, C. R. Osborn, vice-president of General Motors Corporation, and general manager of its Electro-Motive Division, declared in an address at Chicago on January 24. He spoke at a combined luncheon meeting of the Mid-West Shippers' Advisory Board and the Traffic Club of Chicago at the Sherman hotel.

Discussing the advantages of Disels over steam locomotives, the speaker asserted that with them some roads have reduced fuel costs as much as 60 per cent, and many have cut motive-power maintenance costs by more than 50 per cent. He said that Diesel-powered roads were averaging 24 to 30 m.p.h. in the movement of freight trains, which compared with the national average of 17 m.p.h. with steam power.

Main line Diesel locomotives alone are handling approximately 20 per cent of the passenger train mileage and 12 per cent of the gross ton-miles of freight on Class I railroads, Mr. Osborn stated. This development, he said, "is the direct result of the availability, reliability and economy of the Diesel engine." Mr. Osborn discussed briefly the development of the gas turbine, and concluded with the opinion that "the railroads will make a lot of money off of the Diesels they now own and will buy for some time to come, before the Diesel is supplanted by the gas turbine."

The Mid-West Shippers' Advisory Board elected Clayton F. Devine, traffic director of the Silica Sand Traffic Association of Illinois, as its general chairman. He succeeds in this post Arthur H. Schwietert, traffic director of the Chicago Association of Commerce.

Other officers elected are: Alternate general chairman, George M. Cummins, traffic commissioner of the Davenport (Iowa) Chamber of Commerce; and general secyretary, Harold T. Reed, general traffic manager, Line Material Company, Milwaukee, Wis.

Brake Shoe Firm Cuts Prices

The Wheel Truing Brake Shoe Company, Detroit, Mich., announced to its customers on January 27 that it had reduced prices on its products, including orders in transit, by 20 per cent.

Metal Running Board Date Extended

The Association of American Railroads' General Committee has modified paragraph (7) section (r) of interchange Rule 3, extending the effective date thereof, insofar as metal running boards, dome steps and dome platforms on tank cars are concerned, to read as follows:

(r) (7) Running boards, metal: Metal running boards must be applied to box and other roofed cars (including Type LO hopper cars) built new and to cars of these types rebuilt, on which an all-metal roof is applied, on and after April 1, 1947, and to tank cars built new or where new or secondhand tank is applied to existing underframe or secondhand tank is applied to complete new underframe (including complete new trucks), on and after September 1, 1947, which shall comply with the following specifications for running boards other than wood, for box and other roofed cars and tank cars, adopted as standard in 1943 and revised 1946. In interchange.

This extension of effective date is necessary because of the inability of the tank car builders to secure the necessary material for metal running boards, dome steps and dome platforms in time to meet commitments involving delivery of new tank cars for a certain period after April 1, 1947.

Effective January 1, 1947, new Item 9 is added to Interchange Rule 56, to read as follows:

9. Spliced Hose. This action abrogates the necessity for issuing defect cards, under the terms of Rule 57, to cover spliced air hose on cars offered in interchange.

It is found that considerably more cars than anticipated are still equipped with spliced air hose and their removal will be expedited and delays avoided at interchange points by establishing renewal of spliced hose as car owner's responsibility. This action has been approved by the Arbitration committee.

Armed Forces Travel Discount

War Department and railroad representatives met recently in Savannah, Ga., to work out arrangements for the movement of troops during the fiscal year 1948. According to the Office of the Chief of Transportation, the joint military passenger agreement was modified and brought up to date, on a basis which allows a reduction of 10 per cent from established fares to the four branches of the nation's armed services (Army, Navy, Marine Corps, and Coast Guard) for the travel of personnel moving on official transportation requests.

General Contractors Look at the Prospects for 1947

With prospects for an active, yet somewhat uncertain, construction year ahead, members of the Associated General Contractors of America met in their twenty-eighth annual convention at the Hotel Stevens, Chicago, January 27-30, to consider the problems confronting their industry—principally material supplies, labor conditions, and legislation. Speaking before a general session on Wednesday, J. L. Haynes, chief of the Construction division, U. S. Department of Commerce, estimated 1947 construction volume at about $22 billion, an all-time high in dollar value, to include slightly more than $15 billion for new building and construction and between $6.5 billion and $7 billion for maintenance and repair. In work actually accomplished, however, he estimated the 1947 total at less than the previous peak in 1942, when $18 billion were spent, and just under the 1941 total, when construction and maintenance amounted to approximately $15 billion.

Discussing construction costs, Mr. Haynes said that from the figure 119 in December, 1945, the index of wholesale prices of building materials moved forward steadily to 134 in October, 1946, and with the removal of price ceilings early in November, shot up to 155 by the end of December—an increase of 31 per cent in 12 months. He predicted somewhat improved conditions as to material supply and distribution, but a continuing advance in material cost—although less than in 1946.

Speaking for the Associated Equipment Distributors, William A. Danner, executive vice-president of this group, said that production of equipment by the industry last year totaled about $400 million, compared with an average of about $350 million in the years 1937-1940, and a peak of about $1 billion a year during the war—

with the prospect that 1947 production will equal that of 1946.

In a message read to the convention, E. M. Hastings, president of the American Society of Civil Engineers, and chief engineer of the Richmond, Fredericksburg & Potomac, pointed to the outstanding record of mechanization and increased production that has taken place in the construction industry within recent years, and then raised the question whether the minds of those in the industry—both engineers and constructors—and the thinking of those minds, have kept pace with this mechanization. "Why should not we as engineers and constructors," he declared, "take our rightful place in the thinking of the nation and the world in order that the foundations now being laid will be foundations that are secure and upon which the future of the world can stand?"

C. & O. Shows First of Five Streamlined Locomotives

The Chesapeake & Ohio's first streamlined locomotive, one of a fleet of five coal-burners being rebuilt in the road's own shops, will be placed on public inspection at Huntington, W. Va., on February 4, it has been announced by Robert J. Bowman, president. The reconstructed engine temporarily will be used on various parts of the line. Later, it and the four others being rebuilt will be used on new daylight passenger trains the C. & O. plans to operate between Louisville, Ky., and Ashland and between Charlottesville, Va., and Newport News.

The streamlined locomotive, recently completed in the Huntington shop after five months' work, was converted from engine No. 490, in service since 1926. It will retain the number 490. For a number of years it pulled the "George Washington" between Cincinnati, Ohio, and Washington, D. C.

The original 490 had a 4-6-2 wheel arrangement. The streamlined version is a 4-6-4. Only the tender and a part of the boiler of the old 490 were used in its reconstruction. The tender was rebuilt extensively and, like the engine, sheathed in stainless steel. By using the old boiler, the cost of the engine was reduced by about $17,000, it was estimated. The firebox and smokebox are new. Engine and tender have a combined weight of 372 tons. The principal departure from the mechanical design of the old 490 is the use of poppet valves. The new engine also is equipped with roller bearing driving wheels, roller bearing rods and a high-speed booster.

These rebuilt locomotives will supplement the three steam-turbine-electric units under construction for the C. & O. by the Baldwin Locomotive Works, which will be used to pull the new "Chessie" streamlined trains, also under construction. Bids on the construction of ten other streamlined engines will be received soon, the announcement indicated.

Meeting Operating Costs Not Enough

(*Continued from page 278*)

neither reasonable nor possible to expect that the railroad industry, or any industry, can remain in private ownership and management unless its operating results satisfy the public, whose continuous investments are necessary to the building and maintenance of the industry, and unless there is some reasonable prospect of receiving a fair return on those investments."

"A new chapter in the economic life of our country is unfolding," Mr. White concluded. "Mindful as we must be therefore that in the past America has grown and prospered only in proportion as did her means of transportation, and in proportion as her high wages were buttressed by expanding production, let us not through any misunderstanding of these great lessons imperil the economy of the America of tomorrow."

1946 Belied Economic Principle of High Volume—Low Cost

The economic theory long held in transportation circles that, given a sufficient volume of traffic, the railroads are able to absorb higher cost and still earn a profit, proved false during 1946, chiefly because costs rose too fast and rates remained stationary amidst a rising general price level. This was the observation of Robert S. Henry, assistant to president of the Association of American Railroads, in a luncheon address before the Chicago Engineers' Club on January 28.

Tracing the social and economic consequences of railroad technological advances, the A. A. R. public relations chief cited the "movement of goods and persons in trains of cars on tracks" as probably the most important influence in our free "profit-and-loss system." Pointing out that while the A. A. R.'s well-known "flanged-wheel on-the-steel-rail" ad has been criticized as trite, it was actually the most widely-read and influential copy produced in the association's campaign recently, Col. Henry declared that the phenomenon of wheel and rail makes possible "a unique thing," a transportation package, made to order, of individual cars, individually loaded and unloaded, combined with the economy of mass movement in trains."

Anent the car shortage, the speaker pointed out that the carriers, who are now "lectured" for not having enough cars, were, before the defense period, "lectured" with equal fervor for having too many cars and thereby swelling their capital accounts. He attributed the shortages in 1946 to a seven per cent increase in agricultural production; production of coal in "surges"; replacement of heavy war shipments by small consignments; lighter loading of cars; the five-day week; and shorter hauls. For 1947 he foresaw that car shortages would be "fairly general" and "in a few cases, severe." He believed that the supply of cars in relation to offerings would be 90 per cent or better.

Vaughan Says Canadian Roads' Costs Up $100 Million

A warning that the railways of Canada face "problems of a complexity, perplexity and variety beyond memory" was voiced at Halifax, N. S., January 27 by R. C. Vaughan, chairman and president of the Canadian National, in an address before the annual meeting of the Halifax Board of Trade.

"The railways are faced with the complicated task of providing enough equipment to meet demands while, at the same time, freight revenues are taking a disconcerting dip," he declared. "The problem becomes even more complicated through the fact that equipment cannot be taken out of service for repairs without reducing the quantity available to meet almost maximum demands. To relieve this, the Canadian National has approved the purchase of 3,000 units of various types of freight equipment, but the materials needed for this purpose are also the kind greatly in demand for the general reconversion program and we have no means of knowing when we may get delivery."

Compared with 1939, Mr. Vaughan said, the average straight-time rates of Canadian National employees in Canada has risen

from 63 cents to 90 cents an hour. "This means," he continued, "that whereas the average annual earnings per employee were $1,514 in 1939, they will be $2,248 in 1947. This is an increase of 48 per cent."

As examples of increased expenses for materials, he explained that crossties today cost 9 per cent more thain in 1939, rails 32 per cent more and coal bought in the Maritime provinces 77 per cent from the 1939 level, with indications that prices may go still higher. For the whole range of railway purchases, the average cost of materials and supplies today is $1.42 a unit compared with $1.00 in 1939. In 1947, wages and materials will cost the C.N.R. $100,000,000 more than in 1939, he said.

"Canada," Mr. Vaughan continued, "is about the only civilized country that has not had an increase in freight rates since long before the beginning of the second World War. We railroad men are not magicians. If anyone could tell me how to take up increased costs of $100,000,000 without granting us increased prices for the commodity we supply—transportation —I would be eternally grateful to him."

Referring to the war traffic handled by the Canadian National to the eastern seaboard, Mr. Vaughan termed it a "stupendous effort". From the outbreak of war to the end of 1946, more than 50,000 passenger, sleeping, dining and baggage cars were supplied to handle special troop movements and war brides in and out of Halifax alone, he said. On one day, March 23, 1946, as many as 382 trains, passenger and freight, moved in two directions over the C.N.R.'s Atlantic region. Mr. Vaughan indicated that the Canadian National System is now planning to renew its activities to bring in settlers, an activity suspended during the war. Persistent and continuing efforts will be made to attract new industries and to promote and increase tourist traffic to Canada, he said.

American University Institute Will Cover Railroading

Various phases of railroading will be covered in the series of lectures arranged for the second Rail Transportation Institute to be conducted by the American University, Washington, D. C., in cooperation with the Association of American Railroads, from March 4 to April 2. The course will also include seven filed studies of railroad and other transport facilities, discussions of current problems of other modes of transportation, and a series of evening meetings addressed by persons prominent in the transport field.

Among the latter will be R. V. Fletcher, president of the A. A. R., who will speak on "What Railroads Mean to America" at the closing dinner where certificates will be presented to those completing the course. Judge Fletcher is chairman of the university's board of trustees. As noted in the *Railway Age* of January 18, page 196, speakers at other evening meetings will include Colonel J. Monroe Johnson, director of the Office of Defense Transportation.

The institute will be under the direction of Dr. L. M. Homberger, professor of transportation at the university, who will deliver the opening lectures comprising a "coordinating course" in "basic principles of transportation." The second phase will take up "current railroad problems," the lecturers and their subjects being as follows:

C. D. Young, vice-president, Pennsylvania—Railway Organization.

L. W. Horning, vice-president, New York Central—Manpower Problems.

C. A. Miller, vice-president and general counsel, American Short Line Railroad Association—Settling of Railway Labor Disputes, and I. C. C. Organization and Procedures.

C. J. Corliss, manager, Public Section, A. A. R.—Public Relations.

C. P. Blair, superintendent of transportation, Norfolk & Western—Transportation (supervision and coordination within the railroad system and with other systems).

J. Edwards, Jr., general superintendent of transportation, Baltimore & Ohio—Modern Principles in Freight and Passenger Schedules, and Overall Picture of Line Operations.

W. C. Kendall, chairman, Car Service Division, A. A. R.—Car Service.

E. H. Burgess, general counsel, B. & O.—Current Rate-Making Issues.

E. C. Nickerson, assistant general traffic manager, New York, New Haven & Hartford—Selling Transportation (passenger and freight).

Harold H. McLean, assistant general counsel, N. Y. C.—Legal Problems.

Nicholas W. Vancil, assistant vice-president, National City Bank of New York — Financial Problems.

E. H. Bunnell, vice-president, A. A. R.—Streamlining Railroad Accounting and Statistical Paper Work.

Julius H. Parmelee, director, Bureau of Railway Economics, A. A. R. — Economics of Rail Transportation.

Graham E. Getty, statistician, B. R. E., A. A. R.—Statistics.

John P. Cole, general accounting assistant to vice-president, A. A. R.—Cost Finding.

H. K. Snell, assistant to vice-president, A. A. R.—Research in Transportation.

J. B. Akers, chief engineer, Southern—Current Problems in Maintenance of Way.

H. C. Wyatt, assistant general superintendent of motive power, N. & W.—Current Problems in Maintenance of Equipment.

Lectures on "new technical developments" will include talks on electrification, by T. F. Perkinson, assistant manager, Transportation Engineering Division, General Electric Company; signaling, by Burt T. Anderson, director of transportation research, Union Switch & Signal Co.; communication by carrier and radio, by P. B. Tanner, manager, Mobile Radio Sales Department, Bendix Radio Company; Diesel-electric locomotives, by B. C. Gunnell, chief mechanical engineer, Southern; new steam locomotives, by C. E. Pond, assistant to superintendent of motive power, N. & W.; and new passenger and freight cars, by a speaker "to be provided by American Railway Car Institute."

Speakers on current problems of other modes of transportation will include John V. Lawrence, managing director, American Trucking Associations; Dr. Snell of the A. A. R., who will discuss water transportation and pipelines; and Henry L. Deimel, Jr., shipping adviser, Department of State, who will discuss ocean transportation. The field studies, conducted by Dr. Homberger, will include visits to Washington's Union Station; Potomac Yard; the B. & O.'s Mt. Clare shop; the Southern's Diesel shop at Alexandria, Va.; Washington freight stations; Baltimore harbor; and Washington National Airport.

As noted in the issue of January 18, the institute is designed to "meet the needs of young men and women who wish to grow into executive positions in the railroad field." The tuition will be $125, and textbooks will cost approximately $15. The last registration day will be February 24, and applications for admission should be directed to Dr. Homberger, the American University, 1901 F street, N. W., Washington 6, D. C.

Radio Broadcast to Feature a Streamliner Trip

A radio program transcribed aboard the Illinois Central's streamliner, "City of Miami," featuring interviews of the road's employees, will be broadcast over radio station WLS, Chicago, at 1:15 p.m. (C.S.T.) on February 3.

The broadcast is the first in a series—entitled "Wheels of Progress"—designed to familiarize the elementary students of 13,000 midwestern schools with various phases of industry. The broadcast will report a microphone tour of the train made on the streamliner's run on January 28. It will include interviews with the passenger representative, stewardess, chef, waiters, conductor and engineer. R. I. Fort, mechanical inspector of the road, will explain the operation of a Diesel locomotive.

Southern Pine Association to Hold Three Day Meeting

The thirty-second annual convention of the Southern Pine Association will be held at the Roosevelt Hotel, New Orleans, La., on March 18, 19 and 20, according to H. C. Berckes, secretary-manager. Tentative plans for the meeting feature panel sessions as practical forum for an open and frank review of problems confronting producers. In addition to mechanical efficiency and trade promotion, the panel will explore activities in transportation, research and forestry, and legislation in progress.

China Thanks American Industry

Industries of the United States which gave on-the-job training to Chinese sent here during the war have received on January 27 the personal thanks of Generalissimo Chiang Kai-Shek in the form of printed scrolls presented to an executive of each of the firms at a dinner given in New York by the China Institute in America. Among the companies receiving the scrolls were the New York Central, the Northern Pacific, the Pennsylvania, the American Brake Shoe Company, the American Locomotive Company and Pullman, Inc.

Club Meetings

The Northwest Car Men's Association will meet on February 3 at 8 p. m. at the Midway Club, St. Paul, Minn. The program will consist of a discussion of proposed changes in A. A. R. rules.

A meeting of the Car Foremen's Association of Chicago has been scheduled for February 10 at 8 p. m. at the Union Station, Chicago. A discussion of proposed changes in A. A. R. rules will be held.

A list of current publications appears on page 303.

With the Government Agencies

Terminal Line Can Be Agent of Proprietors

I.C.C., reversing its Division 3, finds tariffs not required; Patterson protests

With Commissioner Patterson complaining in a dissenting opinion that his colleagues had "without reasoned consideration" reversed, "by indirection," rules and principles "that have governed the publication and filing of tariffs for many years," the Interstate Commerce Commission has decided that there is no violation of the Interstate Commerce Act in arrangements whereby the Minnesota Transfer functions as agent for its nine proprietary railroads in the performance of terminal switching services without publication of tariffs covering such services. Also approved as another proper "agency" relationship is the payment through Transfer by its proprietors of $1.60 per car to the Central Warehouse Company for switching cars to and from designated tracks where is connects with Transfer and industries located on the warehouse properties and nearby properties of the American Linseed Company.

Carrier-Owner Relations—The decision, embodied in a report on reconsideration in I. & S. Docket No. 5319, reverses the August, 1945, report of the commission's Division 3, which held that the tariff-publishing requirements of the act's section 6 "contain no exception in favor of a common carrier whose stock is owned exclusively by other common carriers," and condemned the $1.60-per-car payment to the Central Warehouse as an "overhead" allowance of the kind it found unlawful in *Propriety of Operating Practices—Terminal Services*, 209 I. C .C. 11. (See *Railway Age* of August 25, 1945, page 349).

Meanwhile however, the report on reconsideration does hold that the $1.60-per-car payment must be published by Transfer's proprietors as an allowance to a shipper insofar as it is made on cars containing commodities owned by Central Warehouse—mainly shipments of coal and gasoline which represent only a small proportion of the total number of cars on which the payment is made. In that connection the commission goes on to find the $1.60 payment "just and reasonable" as an allowance to Central in its role of shipper, but nevertheless requires that the suspended schedules (which purported to publish the $1.60 as an allowance on all cars handled by Central) be canceled and more definite tariffs substituted.

As the report points out, the Minnesota Transfer operates in an industrial area of the same name which is within the corporate limits of St. Paul, Minn., and contiguous to Minneapolis. Its proprietors, respondents in the present proceeding, are the Chicago, Burlington & Quincy; Chicago Great Western; Chicago, Milwaukee, St. Paul & Pacific; Chicago, Rock Island & Pacific; Chicago, St. Paul, Minneapolis & Omaha; Great Northern; Minneapolis & St. Louis; Minneapolis, St. Paul & Sault Ste. Marie; and Northern Pacific. As noted above, Transfer publishes no tariffs covering services performed for these roads; but it is nevertheless "conceded to be a common carrier" and publishes charges for intraterminal switching between industries on its lines.

Trackage Rights Implied—In laying the basis for its approval of the agency arrangement, the commission pointed out, among other thtings, that one of Transfer's by-laws "provides, in substance, that the ownership in severalty of stock issued to any railroad shall entitle such railroad to equal, joint and impartial use and enjoyment of all tracks, rolling stock, and other facilities in common with each other such owner for the transfer and transportation of freight shipped from or to St. Paul or Minneapolis." This, it is implied, gives the proprietary roads trackage rights over Transfer's facilities of the kind (which Division 4 "has in a number of proceedings expressly authorized") that contemplate "the handling of cars by the owning railroad for the tenant railroad under an agency agreement."

Also, the majority cited an unreported January 16, 1939, opinion by the United States District Court at Omaha, Nebr., which "squarely held that a common carrier by railroad may act as agent of another common carrier by railroad in the performance of terminal operations." No appeal was taken from the district court's decision dismissing the complaint.

Meanwhile the commission had discussed the citations made by Division 3 in support of the prior report's findings. It found that the cases on which the division thus relied presented situations different from the one under present consideration. It found also that the line-haul rates of the respondents were established "sufficiently high to compensate for the services performed under the existing arrangement with Transfer"; that the joint-agency set-up results in performance of terminal services "in a more economical manner"; and that the services performed by Transfer and by Central Warehouse "are not in excess of simple team-track switching services."

Patterson Sees Precedent Upset—Dissenter Patterson took the position that not only Transfer but the Central Warehouse, too, is operating a common-carrier

(*Continued on page 289*)

Bureau of Safety Reviews Fiscal '46

Makes its usual report on inspections of equipment and other activities

The annual report of Director S. N. Mills of the Interstate Commerce Commission's Bureau of Safety for the fiscal year ended June 30, 1946, is a 35-page document, which sets forth in the usual form the results of inspection of safety-appliance equipment on railroads together with information on hours-of-service records of employees, installation of signaling facilities, investigation of accidents and other activities of the bureau.

During the year under review, 1,203,408 freight cars, 27,840 passenger-train cars and 14,580 locomotives were inspected, as compared with the inspection of 1,414,674 freight cars, 30,198 passenger-train cars and 17,314 locomotives in fiscal 1945. Of the 1946 tottal, 3.2 per cent of the freight cars, 4 per cent of the passenger-train cars and 5.4 per cent of the locomotives were found to be defective, as compared to the respective 1945 figures of 3.18 per cent, 3.15 per cent and 3.88 per cent.

Air brakes were checked on 2,760 trains (consisting of 114,262 cars) prepared for departure from terminals were found operative on 114,141 cars, or 99.9 per cent. This percentage was attained, however, only after 1,757 cars having defective brakes had been set out, and repairs had been made to the brakes on 1,196 cars remaining in the trains. "These trains," the report observes, "had been prepared for departure; yet when afterward tested by our inspectors, it was necessary to set out or to repair the brakes on the average 1.1 cars per train." Similar tests on 1,406 trains arriving at terminals with 73,672 cars showed that the air brakes were operative on 98 per cent of the cars, and that an average of approximately one car per train was not controlled by power brakes.

"The annual reports of the past several years mentioned use by certain carriers of devices designed to make lock blocks on tightlock couplers inoperative, to compensate for defects in the coupler which were productive of undesired separation of trains," the report continued. "Tightlock couplers which are now being manufactured are of a modified design, which is intended to avoid accidental separation, and couplers of the former designs which are still in service are being modified to conform to the new design."

According to the report, 372 reporting railroads and private car lines which collectively own 2,144,725 freight cars, have equipped a total of 1,330,581 such cars

with power brakes in compliance with an I. C. C. order of September 21, 1945, which require the installation of such brakes by January 1, 1949, on all cars used in freight service, except those equipped with passenger-car brakes. The breakdown of the figures shows that 65.3 per cent of the railroad-owned cars were equipped as of last June 30, but only 39.3 per cent of the cars owned by private car lines.

"There has been continued cooperation with the Association of American Railroads with respect to tests of geared hand brakes," the report said. "Twelve types of vertical-wheel geared brakes and four types of horizontal-wheel geared brakes have been certified by that association as meeting its specifications. Final action on others is pending."

During the fiscal year 1946, 212 of the 701 railroads filing hours-of-service reports reported a total of 70,355 instances of all classes of excess service by employees. This was less than half the fiscal 1945 total of 146,004. The fiscal 1946 figure included 5,893 instances of excess service by train-service employees subject to the 16-hour provision of the law, and 64,462 instances of excess service by operators and other employees subject to the 9-hour and 13-hour provisions of the law.

Collisions, derailments, landslides, high water conditions, fires and adverse weather conditions were the principal reasons for the 5,252 instances (as compared to 60,071 instances in 1945 and 26,795 instances in 1944) which caused train-service employees to remain on duty longer than 16 consecutive hours during 1946. Sickness, death and personal injury accounted for 53,101 of the 64,462 instances of excess service by operators and dispatchers.

The report observes that comparative figures representing the total instances of excess service during World War I and World War II show a "similar effect" upon men engaged in railroad transportation during wartime, the respective number of instances being as follows: 1916, 98,312; 1917, 135,513; 1918, 264,421; 1919, 150,393; 1942, 14,280; 1943, 55,084; 1944, 86,891; and 1945, 146,004.

"However," the report notes, "considering the vast differences in traffic handled and the number of men transferred from railroad service to the armed services of the nation as between the two wars, a great improvement in hours-of-service conditions on railroads is noted during the last war as compared with conditions existing during World War I. Sickness, death and personal injury still remain the primary causes of excess service among employees subject to the 9-hour and 13-hour provisions of law . . ."

As of January 1, 1946, there were 109,403.6 miles of road (142,397.8 miles of track) equipped with block signals, including automatic block signals on 69,967.7 miles of road (101,519.3 miles of track). On the same date, there were 4,407 interlockings in operation, and 10,649.9 miles of road (20,720.1 miles of track) equipped with automatic train-stop, train-control and cab-signal devices. It also was reported that 5,360 spring switches were in service as of January 1, 1946.

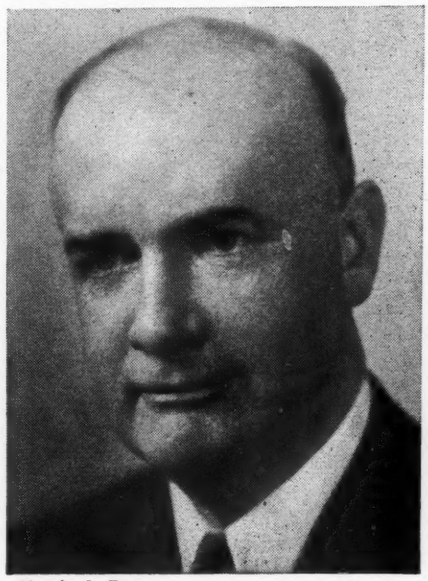
Of the 73 collisions investigated by the bureau in fiscal 1946, 42 occurred in block-signal territories and 20 on lines where the timetable and train-order system is used. The collisions resulted in the deaths of 170 persons and injuries to 2,754. Failure to control speed in accordance with signal indications and an inferior train occupying the main track at the time of an opposing superior train were the principal causes for the collisions. The bureau also investigated 20 derailments which resulted in the deaths of 35 persons and injuries to 812.

Other data in the report disclose that (1) 12 of the year's accident reports recommended the installation of "adequate" block signal systems; (2) during the calendar year 1945, there were 4,100 accidents at highway grade crossings, resulting in the death of 1,903 persons and the injury of 4,446; (3) there were 57 derailments as the result of collisions between trains and automobiles, resulting in the death of 45 persons and the injury of 208 (4) of the total casualties resulting from derailments and train accidents at grade crossings, 13 persons killed and 204 injured were railroad passengers, employees or persons carried under contract; (5) plans and specifications of seven new safety devices were examined.

Mitchell Confirmed for I. C. C.

The Senate on January 27 confirmed President Truman's appointment of Judge Richard F. Mitchell as a member of the Interstate Commerce Commission for the late Claude R. Porter's unexpired term ending December 31, 1949. The nomination had been reported favorably from the Senate committee on interstate and foreign commerce on January 24.

The favorable committee report was voted after a January 23 executive session of the committee which was attended by Judge Mitchell and Commissioner Carroll Miller, whom the President has nominated for a new seven-year term ending December 31, 1953. Action on the Miller nomination was postponed for a week—"without prejudice or significance," Committee Chairman White emphasized as he went on to explain that the delay was at the request of Senator Tobey, Republican of New Hampshire, a member of the committee, who was absent from the meeting at which the nominees appeared. Meanwhile, Mr. Miller continues to serve under that provision of the Interstate Commerce Act which leaves a commissioner, whose term has expired, in office until his successor qualifies.



Harris & Ewing

Richard F. Mitchell

As noted in the *Railway Age* of January 11, page 155, the new Commissioner Mitchell has been a judge of the Iowa Supreme court since 1932, and his name was on a slate of nominees for appointment to the commission which was submitted to President Truman by a committee of the Association of Interstate Commerce Commission Practitioners. He is well-known to the railroads as a result of his service on emergency boards which investigated wage disputes in the industry, and as referee in National Railroad Adjustment Board cases.

Judge Mitchell was born at Fort Dodge, Iowa, October 11, 1889, and was graduated from the State University of Iowa in 1912 with an A.B. degree. The following year he received an LL.B. degree from the same institution, and in 1914 he began the practice of law in Fort Dodge. He was also president of the Mitchell Investment Company and secretary of the Iowa Land Livestock Company. During World War I, Judge Mitchell served overseas for 11 months as a first lieutenant in the Army Air Corps. He was a member of the Democratic State Central Committee of Iowa from 1924 to 1931, serving during part of that time as chairman of the committee and as a member of the Democratic National Committee. As indicated above, he has been a member of the Iowa Supreme Court since November 8, 1932, serving as chief justice from 1934 until 1939.

Object to Hosmer Report on Rail-Barge Differentials

Prescription by the Interstate Commerce Commission of rail-barge rates differentially lower than all-rail rates, as recommended in Examiner Howard Hosmer's proposed report in the No. 26712 proceeding, would result in a "travesty on sound principles of transportation economics and transportation policy," according to the 183-page brief of exceptions which the railroads have filed with the commission. The proposed report which the brief assails was noted in the *Railway Age* of March 23, 1946, page 650.

The railroads take the position that the record in the long-pending proceeding affords no justification for a commission order like that recommended by the examiner. They cite evidence showing that the operating cost of all-rail service is cheaper than rail-barge service and point out that the commission has held "in a long line of cases" that "the factor to be given not only substantial but controlling weight in cases involving the rates of competing agencies of transportation, is the relative cost of the service." The brief further complains that the examiner, confronted with the cost evidence, "concludes that the time has come to write this long line of cases out of the books," while he bases his recommendations on "value of service" considerations alone.

"When we look behind the words in this phrase 'value of service' to the realities of the situation, we find that this phrase is simply a cloak and disguise for competitive necessity," the brief continues in part. "The principle of the value of service is resorted to in order to justify the establishment of lower rates by the rail-barge routes than by the all-rail routes, and thus to insure the diversion of traffic from the all-rail routes to the rail-barge routes. In short, a differential adjustment is proposed which it is believed will be responsive to what the barge lines claim to be their competitive necessities. The very essence of their contention is that the railroads must be required by a minimum rate order to maintain all-rail rates higher than rail-barge rates to enable the barge lines to exist. The barge lines' existence depends not upon some inherent advantage in barge service, but solely upon the level of the all-rail rates!"

Asks $143,000 for O. D. T.

President Truman has asked Congress to appropriate an additional $143,000 for the Office of Defense Transportation for the current fiscal year ending next June 30. O. D. T. has previously received $525,000 for the year.

The Presidential request was embodied in a supplemental budget estimate which also included comment by Director James E. Webb of the Bureau of the Budget. "The 1947 appropriation," Mr. Webb said, "contemplated the termination of the agency by April 30, 1947, with an earlier staff reduction scheduled for January 1, 1947. Additional funds are required to enable [it] to continue operations at the same level as during the first half of the fiscal year, because of the continued serious railroad freight car shortage. Present plans contemplate the maintenance of the existing staff to April 30, 1947, after which a small staff will continue to the close of the fiscal year to perform necessary car service operations."

Purcell Will Give Young Views on Anti-Trust-Relief Bill

Robert W. Purcell, vice-president (law) of the Chesapeake & Ohio, will appear before the Senate committee on interstate and foreign commerce on February 4 to present C. & O. Chairman Robert R. Young's views on S.210, the bill introduced by Senator Reed, Republican of Kansas, to stay the operation of anti-trust laws with respect to carrier rate-making procedures and other joint actions approved by the Interstate Commerce Commission. The committee, when advised that Mr. Purcell would be on hand that date, agreed to hold open for his presentation the record of its hearings on the bill.

Previously, the committee had advised Mr. Young that the record would be held open until February 3 awaiting any presentation he might desire to make. As reported in the *Railway Age* of January 25, page 243, Mr. Young's recent telegram to the committee stated that the "new railroad association," which he plans to organize would have "very definite ideas on the extent to which collaboration on rates and other competitive factors should be and should not be exempted from prosecution under the anti-trust laws."

On the House side, Representative Bulwinkle, Democrat of North Carolina, this week told his colleagues on the committee on interstate and foreign commerce that the committee should not hold hearings on the new Bulwinkle bill (H.R.221) until the Senate has acted upon the Reed bill. Mr. Bulwinkle recalled that the former Bulwinkle bill, which died in the Senate, was passed by the House in December, 1945, by an overwhelming vote of 277 to 45.

Emergency Board on Rutland

Chairman H. H. Schwartz of the National Railway Labor Panel has appointed an emergency board from the panel to investigate disputes between the Rutland and those of its employees who are represented by the Order of Railroad Telegraphers, the Brotherhood of Railway Clerks, and the Brotherhood of Maintenance of Way Employees. The disputes involve the unions' demand for paid-vacation arrangements like those in effect generally throughout the industry.

Would Order Like Rates in Both Directions on Same Route

Representative Rankin, Democrat of Mississippi, last week took a text from the sayings of Abraham Lincoln when he made a brief statement in the House to call attention to a bill he had introduced "to prohibit any carrier subject to Part I of the Interstate Commerce Act, in transporting property between two points, from making a difference in its charges depending on the point of origin or destination." The bill is H. R. 1234.

Mr. Rankin recalled that President Lincoln, "the great leader of the Republican party," had once said that the nation cannot continue to exist "half slave and half free." This country, the gentleman from Mississippi continued, "cannot continue to endure the dishonest, one-way freight rates with which the South and West are today punished." He hoped that every member of the House would read his bill, "because this battle is on from this day forward."

"We have," he added, "two-thirds of the Senate and about one-half of the House, and for the first time in history, we have a President of the United States living in the punished area, and we are going to be heard from."

I. C. C. Postpones Hearings in Per Diem Inquiry

The Interstate Commerce Commission has postponed from February 12 until April 15 the initial hearing in connection with the No. 29670 investigation which it instituted to determine whether a $2 per diem rental charge for freight cars, other than refrigerator and tank cars, would promote greater efficiency in the use of equipment during periods of car shortage. The hearings are to be held in Washington, D. C., before Examiners Myron Witters and Paul C. Smith.

The investigation was instituted by an order dated December 18, 1946, the same day on which the commission entered another order instituting the No. 29669 investigation of railroad practices with respect to freight car service. Initial hearings on the latter, originally set for February 4, were recently postponed until March 18.

The order instituting the per diem inquiry was issued after the commission had received from Director J. Monroe Johnson of the Office of Defense Transportation, a request that such an investigation be launched with a view to determining whether an increase in the per diem rate, from $1.15 to $2, would have the effect of discouraging undue detention of cars by railroads. The Association of American Railroads and American Short Line Railroad Association have taken the position that the commission lacks authority to require the imposition of punitive per diem rates.

Fletcher Denies Tobey Charge on Past Legislative Activities

R. V. Fletcher, president of the Association of American Railroads, has offered to "apologize abjectly and sever my connection immediately with the railroad industry" if Senator Tobey, Republican of New Hampshire, is able to have confirmed the charges he has made with respect to the A.A.R. president's past legislative activities. The senator made the charges at last week's hearings before the Senate committee on interstate and foreign commerce on S.110, the bill introduced by Senator Reed, Republican of Kansas, to stay the operation of the anti-trust laws with respect to carrier rate-making procedures and other joint actions approved by the Interstate Commerce Commission.

Judge Fletcher's reply came in a January 22 letter to Senator Tobey, copies going also to other members of the Senate committee. The Fletcher letter quoted from that part of the hearing's transcript which recorded Mr. Tobey's statement. The Senator said first that he had a "vivid recollection" of a meeting of the committee having been called on short notice.

"Members of the interstate commerce committee," he went on, "were whispered to a meeting upstairs, and we came to the meeting; there was Mr. Fletcher, chief counsel at a large salary of the American Railway Association, and there was counsel for the nine largest roads in the country, legal attainments away above par, splendid men. We had a subcommittee of which Mr. [now President] Truman was a member and Mr. Austin [former senator from Vermont and now U. S. representative on the United Nations Security Council] was a member, and a man named Clark was a member, and I was a member. I was the least of these three brethren that sat on that subcommittee.

"We put through an amendment of certain railroad statutes, and we held exhaustive hearings, and did what we thought was a fair job, and were about ready to report it. The statement was made up there, Mr. Fletcher talking: 'Gentlemen, you have a pretty good bill here. You have done a good job.' He paid us a fine tribute. 'We have two or three little amendments we would like to have adopted, and if they are included we will let it go through.'

"'Did I hear you right?' I said, 'Did

you say you would let this bill go through?'

"'That is right,' he said.

"'Are you telling us or are we telling you?' I asked.

"Back of that is a connotation, and you can see it as visibly as any man of average intelligence. That is the thing that I do not like in legislation, that I do not like in hearings, a little group of men, they let it go through. What have they come to in this country that they tell Congress."

With respect to the foregoing, Judge Fletcher told Mr. Tobey that he desired to say, "positively and emphatically, that the incident to which you refer never took place." The A.A.R. president added that he was "never present at any conference of this kind," and he had "no idea to what bill you are referring."

"I am very sure, however," Judge Fletcher continued, "that I did not use the language you attribute to me; nor was I present at any occasion where there occurred any discussion of the type you describe. I have never discussed legislative matters with you, otherwise than at public hearings and in response to questions.

"I may say that if President Truman or Senator Austin or the Mr. Clark to whom you refer will confirm your statement as to what occurred, I will apologize abjectly and sever my connection immediately with the railroad industry. You have done me a cruel injustice, without the slightest basis for doing so.

"I am taking the liberty of sending a copy of this letter to all members of the Senate committee and I shall give a copy to the press, if requested to do so by any reputable press representative."

Would Make Further Study of Insolvent-Road Problem

Further investigation by the Senate committee on interstate and foreign commerce of conditions surrounding the operation and handling by trustees and receivers of railroads undergoing financial reorganization is proposed in Senate Resolution 65, which has been introduced by Senator Reed, Republican of Kansas, for himself and Senator Myers, Democrat of Pennsylvania. In introducing the resolution Senator Reed said that the objective of the proposed inquiry would be to frame a new voluntary reorganization bill conforming to the views expressed by President Truman when he "pocket vetoed" the bill (S.1253) which the previous Congress passed last year with provisions making voluntary reorganization procedures available to large roads already undergoing reorganization as well as to all roads not in the hands of the courts.

Senator Reed recalled that the committee made a similar study last year in connection with its consideration of the vetoed S.1253; and that following the veto "a bipartisan statement was issued by members of the conference committee which dealt with this legislation, to the effect that a measure would be promptly introduced" in the new Congress. (See *Railway Age* of August 24, 1946, page 354.) He went on to say that S. Res. 65 was written with those matters in mind, being designed to cover developments subsequent to last year's inquiry. Moreover, Senator Reed expressed his hope that the new bill could be taken up "in a preliminary stage" with the White House.

The resolution asserts, among other "whereases", that "the continued holding of roads that have become solvent in trustee or receiver operation as insolvent roads, and further efforts to reorganize under section 77, railroads which no longer need such reorganization, are contrary to sound public policy." It goes on to direct the committee to make the investigation to ascertain, among other things, whether "there should be elimination or reduction of any of the exceptions heretofore proposed to legislation on this subject." In this connection, S.1253's procedures would not have been available to roads in receivership and their applicability to roads reorganizing under section 77 would have been limited to those which reported for any of the calendar years 1942 to 1944 gross railway operating revenues in excess of $50,000,000.

Other matters which the resolution would direct the committee to investigate include the "causes for the failures" to reduce interest rates of roads in bankruptcy proceedings, to arrange for refundings of indebtedness by such roads, and to discharge such roads from bankruptcy without "drastic reorganization." The inquiry would also cover fees paid to receivers, trustees, counsel, bankers, committees, and "experts."

Senate Confirms Harriman as Secretary of Commerce

The Senate on January 27 confirmed President Truman's appointment of W. Averell Harriman as Secretary of Commerce, a position in which the former chairman of the Union Pacific board of directors had been serving under recess appointment since last September, when he succeeded former Vice-President Henry A. Wallace. The nomination was reported favorably from the Senate committee on interstate and foreign commerce on January 24.

Terminal Line Can Be Agent of Proprietors

(*Continued from page 286*)

railroad. He reminded the commission that it held prior to 1897 and was sustained by the courts "that a local rate is the only rate which a carrier may lawfully establish by its independent action and that such a rate can be estatblished only between points on its own line." The majority, he went on, disregards that "well-established principle and not only finds that respondents may publish rates to points not on their lines but goes further and finds that they may publish such rates over the lines of an intermediate, independent, common carrier without its concurrence."

Next, the dissenting commissioner pointed out that the commission has published no amendment to its Traffic Circular 20 (Section 10, Part 141, Freight Schedules, Title 49, Transportation and Railroads, Code of Federal Regulations) which stipulates that carriers performing switching or terminal services must publish the charges therefor, "regardless of absorption provisions published in connecting lines tariffs." Yet Mr. Patterson thinks that any modification which the commission decided to make in this requirement would have to be published under the Federal Register Act and Administrative Procedures Act.

He seemed unimpressed by the majority's reliance on the unreported court opinion in that the majority report "fails to give the reason an appeal was not taken and leaves the erroneous impression the commission accepted the district court's opinion as sound." "It is," Mr. Patterson continued, "as well settled as any principle established by our administration of the Interstate Commerce Act that switching rates must be published and filed with us, yet the majority finds that it is not necessary for the Transfer Company to do so. It does not, however, specifically reverse the prior decisions. It attempts unsuccessfully to distinguish two of them but ignores the others. It does not cancel Section 10, Part 141, Title 49, and so far as I can determine it does not contemplate the publication of a new rule in place thereof."

Trackage Rights Dormant—Neither was the dissenting commissioner impressed with the trackage-rights theory. "The majority," he said, "does not specifically find that respondents have trackage rights over the lines of the Transfer Company. It may be that such a conclusion is intended to be inferred from its reference to the so-called by-law. The statement as to that by-law in the report is somewhat inaccurate. . . . It does not specifically mention trackage rights but purports to give the original five stockholders [of Transfer], and any carrier acquiring all of the stock of any one of them rights and privileges which if exercised by the present nine stockholders or even by a few of them would prevent the Transfer Company from performing its duties as a common carrier. None of the respondents has ever operated over the rails of the Transfer Company. The normal presumption is that trackage rights, if they ever existed, have been abandoned by failure to use them for over 62 years. Even if such a reasonable presumption is disregarded, such dormant rights would not make the Transfer Company an agent of respondents or be any evidence that such a relation exists."

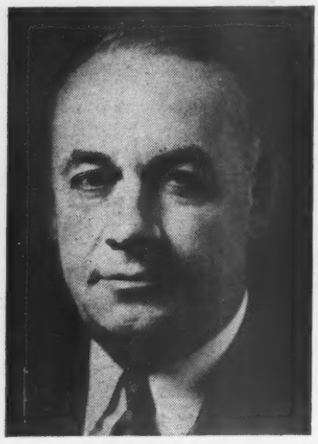
Previously, Commissioner Patterson had called attention to "one important implication of the majority report," i.e., that if Transfer is agent of each of the respondents, it "may not lawfully maintain any average demurrage agreement with any industry on its line," for such agreements "must be made with each of the respondents," Moreover, "credits earned on cars arriving over the lines of one carrier may not be used to offset debits accrued on cars arriving over the lines of another respondent."

Another dissenting expression came from Commissioner Miller who was of the opinion that the evidence "clearly supports the prior findings of Division 3." Commissioner Barnard, "being necessarily absent," did not participate in the disposition of the proceeding.

Supply Trade

Alco Modernizes Organization for Diesel Production

The American Locomotive Company has completed a transition from the primary function of constructing custom-designed steam locomotives to the mass production of a completely new line of Diesel-electric locomotives, according to Robert B. McColl, president. Organizational changes, he



Perry T. Egbert

said, have been made to meet the new and accelerated tempo of railroad motive power requirements.

A new administrative committee was appointed by Mr. McColl to plan, direct and coordinate all company activities. Members of the committee are Perry T. Egbert, William L. Lentz, William S. Morris, Norman C. Naylor, vice-presidents; Herman Press, treasurer; and James D. Vaughan, comptroller. Duncan W. Fraser, chairman of the board of directors, will serve, ex officio, as a member of the committee, which will be presided over by Mr. McColl.

William S. Morris

Mr. Egbert, who is also a director and who has been with Alco since 1920, will head all Diesel-electric and steam locomotive activities, including locomotive spare parts and marine and stationary Diesel engines, with headquarters at the Schenectady, N. Y., plant. Mr. Morris, a director and active in the locomotive field since 1922, has been placed in charge of the other three divisions: Alco Products, Railway Steel-Spring and the Canadian affiliate, the

Norman C. Naylor

Montreal Locomotive Works. His headquarters will be in New York.

Hunter Michaels will continue as director of the Railway Steel-Spring division and Hugh M. Corrough will remain director of the Alco Products division. Supervision of the Montreal Locomotive Works remains with its executive vice-president, Sir Frederick Carson of Montreal.

Mr. Naylor, in addition to being a member of the policy committee and the board of directors, will direct and coordinate the sales of all Alco divisions, with headquarters in New York. Associated with Alco and its predecessor companies since 1895,

William A. Callison

he has been vice-president in charge of western regional sales since 1930.

William A. Callison has been elected vice-president in charge of western regional sales. His headquarters will be in Chicago and he will be in charge of sales offices at Chicago, St. Louis, Mo., St. Paul, Minn., and San Francisco, Calif. William E. Corrigan has been elected vice-president in charge of eastern regional sales, with headquarters in New York. He joined Alco in 1909 and was elected vice-president in 1937. Frank J. Foley, formerly vice-president in charge of sales, has been appointed a consultant.

John B. Girdler has been appointed assistant general manager of sales of the **Vanadium Corporation of America**, New York. Mr. Girdler was formerly district sales manager and will continue to handle sales in the eastern district.

Stephen S. Conway, assistant vice-president in the sales department of the Brake Shoe & Castings division of the **American Brake Shoe Company**, has been appointed vice-president in that department, with headquarters in Chicago. Mr. Conway joined American Brake Shoe

Stephen S. Conway

in 1912 and has served in the sales department of the Brake Shoe & Castings division since 1929. **Ralph L. Robinson**, district sales manager of the division, has been appointed assistant vice-president in the sales department, to succeed Mr. Conway.

The **Cleveland Chain & Manufacturing Co.**, Cleveland, Ohio, has announced the purchase of the **Woodhouse Chain Works** of Trenton, N. J., which will be operated under that name as a division of the company.

The **Dampney Company of America**, Boston, Mass., has announced the appointment of **LaVern Warren Marsh** to its sales staff as special railroad representative.

J. Milton Moon has been appointed sales manager of the **Signode Steel Strapping Company**, Chicago. He formerly served as manager of field engineering and research.

The **Union Railway Equipment Company**, at Chicago, has appointed **J. P. Armstrong**, Russ Building, San Francisco, Cal., as representative to handle sales of power hand brakes and refrigerator car devices in the West Coast territory.

The **Rust-Oleum Corporation** has announced the appointment of **John Thorp**, president of the John N. Thorp Company, New York, as railroad sales agent for certain railroads serving the New York area, with headquarters at 50 Church street. The company also has announced the appointment of the following factory sales representatives: **U. Stanley Ackles**, Seattle, Wash., for Oregon, Washington and part of Idaho; **A. A. Ahlff**, St. Louis,

Mo., for Iowa, central and southern Illinois and eastern Missouri, and **Paul Moffit,** Jackson, Mich., for western Michigan and part of northern Illinois. Mr. Moffit's headquarters will be at Kalamazoo, Mich.

Fritz B. Ernst, vice-president in charge of sales of the **American Steel Foundries,** with headquarters at Chicago, retired on January 31. Also retired on that date were **Archiebald W. McLaren,** vice-president in charge of the company's New York office, and **A. G. Williams,** manager of the export department, with headquarters at Chicago.

The **Westinghouse Air Brake Company,** Pittsburgh, Pa., has announced the following appointments: **J. B. Hull,** assistant district manager of the San Francisco,

J. B. Hull

Calif., office; **J. Alan Campbell,** district engineer, also at San Francisco; and **S. Jory,** manager of the export division, with headquarters at the general office in Wilmerding, Pa.

Mr. Hull joined Westinghouse Air Brake in 1920 as a special engineer and served in various engineering capacities until 1929, when he was transferred to the San Francisco office as assistant district engineer. He was appointed district engineer in 1935.

J. Alan Campbell

Mr. Campbell joined the company as a special apprentice in 1936. He was transferred to the San Francisco office in 1937 as mechanical expert, appointed engineer in 1942 and assistant district engineer in 1946. Mr. Jory joined Westinghouse Air Brake in 1924 as a special apprentice. He was engaged in general engineering until his transfer to the export division in 1928, where he served in engineering and sales capacities until his recent appointment.

The appointments of **T. G. Myles** as representative of the Topeka, Kan., office and **R. M. Beswick** as representative of

S. Jory

the Washington, D. C., office also were announced.

F. J. Bogard, formerly sales agent at the Huntington, W. Va., office of the mine car sales division of the **American Car and Foundry Company,** has been assigned new sales duties in which he will cover the entire bituminous coal region for that division. **C. V. Murphy** has been appointed sales agent at the Huntington office of the division.

Joseph T. Ryerson & Son, Inc., Chicago, have announced the appointment of **Albert J. Bauer** as sales representative in the Rocky Mountain states. District sales office headquarters are maintained in the Denver National building, Denver, Colo. **E. F. Wood,** formerly in charge of the Denver office, has been appointed manager of the work order department at the Los Angeles, Calif., steel-service plant.

The **Railway Track-Work Company,** Philadelphia, Pa., has announced the appointments of four new sales representatives to handle the company's track-maintenance and track-grinding equipment: The R. E. Bell Company, St. Louis, Mo.; Leon E. and Glen C. Hunt, Atlanta Terminal Station building, Atlanta, Ga.; Robert L. Nutt, Jr., National Bank of Commerce building, Norfolk, Va., and W. A. Peck, 59 East Van Buren street, Chicago.

OBITUARY

John P. Neff, who retired in 1946 after 32 years' service as vice-president in charge of engineering for the American Arch Company, died on January 17. Mr. Neff was born on May 2, 1874, at Fontaine, Ind., and was graduated in mechanical engineering from Purdue University in 1895. In the same year he joined the Chicago & North Western and, in 1902, was appointed master mechanic of the road's Western Iowa division. He joined the American Locomotive Equipment Company in 1904 and, in 1910, joined American Arch, serv-

John P. Neff

ing as engineer of tests and mechanical engineer until 1913, when he was elected vice-president in charge of engineering.

Equipment and Supplies

FREIGHT CARS

The SEABOARD AIR LINE is inquiring for 500 box cars and 175 phosphate cars.

The PAULISTA (Brazil) has ordered 1,000 box cars from the Pullman-Standard Car Manufacturing Company, 1,000 gondolas from the American Car and Foundry Company and 1,000 flat cars from the Pressed Steel Car Company.

The NEW YORK, NEW HAVEN & HARTFORD has ordered 500 50-ton box cars from the Pullman-Standard Car Manufacturing Company. The inquiry for this equipment was reported in the *Railway Age* for December 7, 1946, page 978.

The LOUISVILLE & NASHVILLE has ordered 1,600 55-ton steel hopper cars from the Pullman-Standard Car Manufacturing Company at Bessemer, Ala., and 1,200 55-ton steel hopper cars and 200 70-ton ballast cars from the American Car and Foundry Company at St. Louis, Mo.

The CHESAPEAKE & OHIO has ordered 1,000 70-ton hopper cars from the General American Transportation Corporation. This order, plus the one for 1,000 50-ton box cars reported on page 250 of last week's *Railway Age,* completes the purchase of the equipment for which the C. & O. was inquiring, as reported in the issue for January 24, page 121. The hopper cars will be equipped with Timken roller bearings and will cost about $4,200,000.

(*Continued on page 293*)

Diesel-Electric and Electric Locomotives Ordered from the General Electric Company in 1946

Railroad Orders—For Service in the United States

Purchaser	No.	Wheel Arrangement	Service	Type	Weight	Horsepower	Date of Order	Date of Delivery	Builder Locomotive Builder Electrical Equipment Engine Builder
Alexander	1	B-B	Rd. Sw.	Diesel-Elec.	88,000	380	April	.....	G. E.-Cater
Almanor	1	B-B	Rd. Sw.	Diesel-Elec.	88,000	380	October	.....	G. E.-Cater
Belfast & Moosehead Lake	2	B-B	Rd. Sw.	Diesel-Elec.	140,000	600	January	.....	G. E.-Cooper-Bessemer
Central California Traction	3	B-B	Rd. Sw.	Diesel-Elec.	140,000	600	July	.....	G. E.-Cooper-Bessemer
	2	B-B	Rd. Sw.	Diesel-Elec.	88,000	380	September	.....	G. E.-Cater
Coudersport & Port Allegany	1	B-B	Rd. Sw.	Diesel-Elec.	88,000	380	April	July	G. E.-Cater
East Washington	1	B-B	Sw.	Diesel-Elec.	90,000	300	April	.....	G. E.-Cummins
Fernwood, Columbia & Gulf	1	B-B	Rd. Sw.	Diesel-Elec.	88,000	380	September	.....	G. E.-Cater
Fore River	2	B-B	Sw.	Diesel-Elec.	90,000	300	November	.....	G. E.-Cummins
Frankfort & Cincinnati	3	B-B	Rd. Sw.	Diesel-Elec.	140,000	600	November	.....	G. E.-Cooper-Bessemer
Georgia Northern	2	B-B	Rd. Sw.	Diesel-Elec.	140,000	600	January	.....	G. E.-Cooper-Bessemer
Grafton & Upton	2	B-B	Rd. Sw.	Diesel-Elec.	88,000	380	February	.....	G. E.-Cater
Hillsboro & Northeastern	1	B-B	Rd. Sw.	Diesel-Elec.	88,000	380	December	.....	G. E.-Cater
Jamestown, Westfield & Northwestern	2	B-B	Rd. Sw.	Diesel-Elec.	140,000	600	September	.....	G. E.-Cooper-Bessemer
Lake Front Dock R. R. & Terminal Co.	12	B	Sw.	Electric	60,000	250	October	.....	General Electric
Maine Central	1	B-B	Rd. Sw.	Diesel-Elec.	88,000	380	November	.....	G. E.-Cater
Manistee & Northeastern	1	B-B	Rd. Sw.	Diesel-Elec.	88,000	380	March	August	G. E.-Cater
Mississippi Export	1	B-B	Rd. Sw.	Diesel-Elec.	140,000	600	July	.....	G. E.-Cooper-Bessemer
	1	B-B	Rd. Sw.	Diesel-Elec.	140,000	600	October	.....	G. E.-Cooper-Bessemer
Saratoga & Schuylerville	1	B-B	Rd. Sw.	Diesel-Elec.	140,000	600	August	.....	G. E.-Cooper-Bessemer
South Georgia	1	B-B	Rd. Sw.	Diesel-Elec.	140,000	600	January	.....	G. E.-Cooper-Bessemer
Southern Indiana	2	B-B	Sw.	Diesel-Elec.	130,000	400	February	.....	G. E.-Cummins
Springfield Suburban	2	B-B	Rd. Sw.	Diesel-Elec.	88,000	380	April	August	G. E.-Cater
Tenn. Coal, Iron & R. R. Co.	1	B-B	Sw.	Diesel-Elec.	100,000	300	March	.....	G. E.-Cummins
Tidewater Southern	1	B-B	Rd. Sw.	Diesel-Elec.	88,000	380	September	.....	G. E.-Cater

Private Car Lines—For Service in the United States

Purchaser	No.	Wheel Arrangement	Service	Type	Weight	Horsepower	Date of Order	Date of Delivery	Builder Locomotive Builder Electrical Equipment Engine Builder
American Agricultural Chemical Co.	1	B-B	Sw.	Diesel-Elec.	130,000	400	May	.....	G. E.-Cummins
American Car & Foundry Co.	1	B-B	Sw.	Diesel-Elec.	90,000	300	February	.....	G. E.-Cummins
American Locomotive Co.	1	B	Rd. Sw.	Diesel-Elec.	50,000	150	October	.....	G. E.-Cooper-Bessemer
American Viscose Co.	1	B-B	Sw.	Diesel-Elec.	130,000	400	April	.....	G. E.-Cummins
	1	B-B	Sw.	Diesel-Elec.	160,000	500	April	.....	G. E.-Cummins
	3	B-B	Sw.	Diesel-Elec.	90,000	300	June	.....	G. E.-Cummins
American Woolen Mills	1	B	Sw.	Diesel-Elec.	50,000	150	March	.....	G. E.-Cummins
	1	B-B	Sw.	Diesel-Elec.	90,000	300	April	.....	G. E.-Cummins
Anna Quarries	1	B-B	Sw.	Diesel-Elec.	90,000	300	April	.....	G. E.-Cummins
Bethlehem Pacific Coast Steel Corp.	1	B	Sw.	Diesel-Elec.	50,000	150	June	.....	G. E.-Cummins
Bethlehem Steel Corp.	1	B-B	Sw.	Diesel-Elec.	100,000	300	March	.....	G. E.-Cummins
	2	B-B	Sw.	Diesel-Elec.	100,000	300	August	.....	G. E.-Cummins
	1	B-B	Sw.	Diesel-Elec.	160,000	500	August	.....	G. E.-Cummins
	1	B	Sw.	Diesel-Elec.	50,000	150	September	.....	G. E.-Cummins
Calumet & Hecla Consolidated Copper Co.	1	B-B	Rd. Sw.	Diesel-Elec.	140,000	600	February	.....	G. E.-Cooper-Bessemer
Camden Coke Co.	1	B-B	Sw.	Diesel-Elec.	90,000	300	November	.....	G. E.-Cummins
Carnegie-Illinois Steel Corp.	4	B-B	Sw.	Diesel-Elec.	160,000	550	July	.....	G. E.-Cummins
	4	B-B	Sw.	Diesel-Elec.	160,000	550	October	.....	G. E.-Cummins
Central Illinois Light Co.	1	B	Sw.	Diesel-Elec.	50,000	150	February	.....	G. E.-Cummins
Champion Paper & Fibre Co.	1	B-B	SW.	Diesel-Elec.	90,000	300	December	.....	G. E.-Cummins
Cincinnati Milling Machine Co.	1	B	Sw.	Diesel-Elec.	50,000	150	June	.....	G. E.-Cummins
Cliffs Dow Chemical Co.	1	B-B	Sw.	Diesel-Elec.	130,000	400	February	.....	G. E.-Cummins
Colorado Fuel & Iron Corp.	8	B	Sw.	Diesel-Elec.	50,000	150	February	.....	G. E.-Cummins
	1	B-B	Sw.	Diesel-Elec.	88,000	300	February	.....	G. E.-Cummins
Wickwire Spencer Steel Division	1	B-B	Sw.	Diesel-Elec.	160,000	500	August	.....	G. E. -Cummins
Consolidated Sand & Gravel Co.	1	B	Sw.	Diesel-Elec.	50,000	150	December	.....	G. E.-Cummins
Diamond Alkali Co.	1	B-B	Sw.	Diesel-Elec.	90,000	300	March	.....	G. E.-Cummins
	1	B	Sw.	Diesel-Elec.	50,000	150	December	.....	G. E.-Cummins
E. I. du Pont de Nemours & Co.	3	B-B	Sw.	Diesel-Elec.	160,000	500	March	.....	G. E.-Cummins
Eastern States Coop. Milling Co.	1	B-B	Sw.	Diesel-Elec.	90,000	300	January	.....	G. E.-Cummins
Eastern States Milling Co.	1	B-B	Sw.	Diesel-Elec.	90,000	300	April	.....	G. E.-Cummins
Eastman Kodak Co.	1	B-B	Sw.	Diesel-Elec.	160,000	500	January	July	G. E.-Cummins
E. B. Eddy Co.	1	B-B	Sw.	Diesel-Elec.	90,000	300	March	.....	G. E.-Cummins
Elmira Foundry Co.	1	B	Sw.	Diesel-Elec.	50,000	150	March	.....	G. E.-Cummins
Flambeau Paper Co.	1	B-B	Sw.	Diesel-Elec.	90,000	300	April	.....	G. E.-Cummins
General Electric Co.	1	B-B	Sw.	Diesel-Elec.	90,000	300	September	.....	G. E.-Cummins
	1	B-B	Sw.	Diesel-Elec.	160,000	500	December	.....	G. E.-Cummins
	1	B	Sw.	Diesel-Elec.	50,000	150	December	.....	G. E.-Cummins
Greenville Mfg. Co.	1	B-B	Sw.	Diesel-Elec.	90,000	300	September	.....	G. E.-Cummins
Holly Sugar Corp.	1	B	Sw.	Diesel-Elec.	50,000	150	February	.....	G. E.-Cummins
Illinois Power Co.	1	B-B	Sw.	Diesel-Elec.	90,000	300	February	.....	G. E.-Cummins
International General Electric Company	1	B	Sw.	Diesel-Elec.	50,000	150	December	.....	G. E.-Cummins
	1	B-B	Sw.	Diesel-Elec.	90,000	300	December	.....	G. E.-Cummins
Koppers Co.	1	B	Sw.	Diesel-Elec.	50,000	150	July	.....	G. E.-Cummins
	2	B	Sw.	Diesel-Elec.	50,000	150	September	.....	G. E.-Cummins
	1	B	Rd. Sw.	Diesel-Elec.	50,000	150	October	.....	G. E.-Cooper-Bessemer
Lone Star Cement Co.	3	B	Sw.	Diesel-Elec.	50,000	150	January	.....	G. E.-Cummins
Lynn Sand & Stone Co.	1	B	Sw.	Diesel-Elec.	50,000	150	June	.....	G. E.-Cummins
Magnolia Petroleum Co.	2	B-B	Sw.	Diesel-Elec.	130,000	400	March	.....	G. E.-Cummins
Marion Electric Shovel Company	1	B-B	Sw.	Diesel-Elec.	90,000	300	September	.....	G. E.-Cummins
Maryland Slag Co.	1	B-B	Sw.	Diesel-Elec.	130,000	550	February	.....	G. E.-Cummins
Maryland State Hospital	1	B-B	Sw.	Diesel-Elec.	90,000	300	August	.....	G. E.-Cummins
Masonite Corp.	1	B-B	Sw.	Diesel-Elec.	160,000	500	November	.....	G. E.-Cummins
T. R. Miller Mills	1	B-B	Sw.	Diesel-Elec.	90,000	300	August	.....	G. E.-Cummins
Mississippi Lime Co.	1	B	Sw.	Diesel-Elec.	50,000	150	July	.....	G. E.-Cummins
Philadelphia Electric Co.	1	B-B	Sw.	Diesel-Elec.	90,000	300	March	.....	G. E.-Cummins
Phosphate Mining Co.	1	B-B	Sw.	Diesel-Elec.	90,000	300	April	.....	G. E.-Cummins
Pittsburgh Plate Glass Co.	1	B-B	Sw.	Diesel-Elec.	100,000	300	March	.....	G. E.-Cummins
Potomac Edison Co.	1	B	Sw.	Diesel-Elec.	50,000	150	May	.....	G. E.-Cummins
Public Service Co. of Indiana	1	B-B	Sw.	Diesel-Elec.	90,000	300	July	.....	G. E.-Cummins
John A. Roebling's Sons	3	B-B	Sw.	Diesel-Elec.	90,000	300	November	.....	G. E.-Cummins
Singer Mfg. Co.	1	B-B	Sw.	Diesel-Elec.	100,000	300	January	.....	G. E.-Cummins
J. B. Smith & Sons	1	B	Sw.	Diesel-Elec.	50,000	150	February	.....	G. E.-Cummins
W. T. Smith Lumber Co.	1	B	Sw.	Diesel-Elec.	50,000	150	February	June	G. E.-Cummins
Southwestern Portland Cement Co.	1	B-B	Rd. Sw.	Diesel-Elec.	140,000	600	February	.....	G. E.-Cooper-Bessemer
Tidewater Associated Oil Co.	1	B	Sw.	Diesel-Elec.	50,000	150	December	.....	G. E.-Cummins
Transportation Corps.	1	B-B	Sw.	Diesel-Elec.	100,000	680	July	.....	G. E.-Cummins
Upjohn Co.	1	B	Sw.	Diesel-Elec.	50,000	150	July	.....	G. E.-Cummins
Utah Copper Co.	5	B-B	Road	Electric	250,000	3,100	March	.....	General Electric
	2	B-B	Road	Electric	250,000	3,100	July	.....	General Electric
Victor Chemical Works	1	B-B	Sw.	Diesel-Elec.	90,000	300	February	.....	G. E.-Cummins
Washburn Wire Co.	1	B	Sw.	Diesel-Elec.	50,000	150	February	.....	G. E.-Cummins
Weirton Steel Co.	1	B-B	Sw.	Diesel-Elec.	100,000	300	February	.....	G. E.-Cummins
Western Electric Co.	1	B	Sw.	Diesel-Elec.	50,000	150	March	.....	G. E.-Cummins
Western Indiana Gravel Co.	1	B-B	Sw.	Diesel-Elec.	90,000	300	March	.....	G. E.-Cummins
Whitin Machine Works	1	B-B	Sw.	Diesel-Elec.	130,000	400	October	.....	G. E.-Cummins

United States—Export

Purchaser	No.	Wheel Arrangement	Service	Type	Weight	Horsepower	Date of Order	Date of Delivery	Builder Locomotive Builder Electrical Equipment Engine Builder
Arabian-American Oil	2	B	Rd. Sw.	Diesel-Elec.	50,000	150	October	.....	G. E.-Cooper-Bessemer
	2	B-B	Rd. Sw.	Diesel-Elec.	88,000	380	October	.....	G. E.-Cater
Argentina	1	B	Sw.	Diesel-Elec.	50,000	150	June	.....	G. E.-Cummins
Atlas Horidos de Mexico	2	B-B	Sw.	Diesel-Elec.	130,000	400	May	.....	G. E.-Cummins
Beaver Wood Fibre Co. (Canada)	1	B	Sw.	Diesel-Elec.	50,000	150	September	.....	G. E.-Cummins
Canada Starch Co.	1	B-B	Sw.	Diesel-Elec.	90,000	300	February	.....	G. E.-Cummins
	1	B-B	Sw.	Diesel-Elec.	130,000	400	May	.....	G. E.-Cummins
Canadian General Electric Co.	1	B	Sw.	Diesel-Elec.	50,000	150	April	.....	G. E.-Cummins
Canadium Gypsum Co.	1	B	Rd. Sw.	Diesel-Elec.	50,000	150	October	.....	G. E.-Cooper-Bessemer
	1	B	Sw.	Diesel-Elec.	50,000	150	December	.....	G. E.-Cummins
Distillers Corp. (Canada)	1	B	Sw.	Diesel-Elec.	50,000	150	February	.....	G. E.-Cummins
Dominion Steel & Corp Corp. (Canada)	2	B-B	Sw.	Diesel-Elec.	90,000	300	November	.....	G. E.-Cummins
	3	B-B	Sw.	Diesel-Elec.	130,000	400	November	.....	G. E.-Cummins
Falconbridge Nickel Mines (Canada)	1	B-B	Sw.	Diesel-Elec.	90,000	300	January	.....	G. E.-Cummins
	1	B-B	Sw.	Diesel-Elec.	90,000	300	December	.....	G. E.-Cummins
France	4	B	Sw.	Diesel-Elec.	50,000	150	August	.....	G. E.-Cummins
Halifax Shipyard (Canada)	1	B	Sw.	Diesel-Elec.	50,000	150	March	.....	G. E.-Cummins
Highway Paving Co. (Canada)	1	B-B	Sw.	Diesel-Elec.	90,000	300	September	.....	G. E.-Cummins
	1	B-B	Sw.	Diesel-Elec.	90,000	300	November	.....	G. E.-Cummins
Mexico	2	B	Sw.	Diesel-Elec.	50,000	150	September	.....	G. E.-Cummins
National Harbor Board (Vancouver, B.C.)	1	B-B	Sw.	Diesel-Elec.	160,000	500	May	.....	G. E.-Cummins
Normetal Mining Corp. (Canada)	1	B-B	Sw.	Diesel-Elec.	160,000	500	April	.....	G. E.-Cummins
Ontario Minnesota Pulp & Paper Co.	1	B-B	Sw.	Diesel-Elec.	90,000	300	March	.....	G. E.-Cummins
Ontario Paper Co.	1	B-B	Sw.	Diesel-Elec.	90,000	300	July	.....	G. E.-Cummins
Page-Hersey Tubes (Canada)	1	B-B	Sw.	Diesel-Elec.	90,000	300	September	.....	G. E.-Cummins
Patino Tin & Construction Co. (Bolivia)	2	B-B	Sw.	Diesel-Elec.	140,000	600	September	.....	G. E.-Cooper-Bessemer
South Porto Rico Sugar Co.	1	B-B	Sw.	Diesel-Elec.	88,000	380	July	.....	G. E.-Cater
Thurso & National Valley R. R. (Canada)	1	B-B	Rd. Sw.	Diesel-Elec.	140,000	600	April	.....	G. E.-Cummins
Turner Newall (Canada)	1	B	Rd. Sw.	Diesel-Elec.	50,000	150	October	.....	G. E.-Cooper-Bessemer
United Fruit Co.	4	B-B	Rd. Sw.	Diesel-Elec.	140,000	600	October	.....	G. E.-Cooper-Bessemer

Delivery is scheduled to begin in October, depending on the availability of materials. The cars, to be constructed in East Chicago, Ind., will be largely confined to C. & O. on-line operations.

LOCOMOTIVES

197 Locomotives Ordered from General Electric in 1946

Orders for 178 Diesel-electric locomotives and 19 electric locomotives were received by the General Electric Company in 1946. The list of orders and the totals were not available when the January 4 (Annual Statistical) issue of *Railway Age* went to press.

Railroads in the United States ordered 48 locomotives from the company, including 12 electric engines. Domestic private car lines and industrial companies placed orders for 104 engines, of which 7 were electric locomotives. Export orders called for 44 Diesel-electric engines and no electric locomotives.

The Diesel-electric locomotives vary in weight from 50,000 lb. with 150-hp. Diesel-electric power plants, to 160,000 lb. with power plants running as high as 600-hp.

The total horsepower of the Diesel-electric locomotive orders amounts to 60,540.

The NEW YORK CENTRAL is inquiring for 10 locomotives of the 2-8-4 type for the Pittsburgh & Lake Erie.

PASSENGER CARS

The BOARD OF TRANSPORTATION, New York, has ordered 10 stainless steel subway cars from the Budd Company, subject to approval by the city's Board of Estimate. Under the contract, five of the cars would cost $109,000 each and five would cost $116,000 each, a difference caused by the use of different types of trucks. Orders for two extra trucks—one of each type—were included.

Financial

ALABAMA GREAT SOUTHERN.—*Equipment Trust Certificates.*—This road has sold, subject to Interstate Commerce Commission approval, $1,520,000 of series J equipment trust certificates to Halsey, Stuart & Co. and associates on a bid of 99.278 for a 1½ per cent interest rate. The certificates, dated February 15, 1947, and maturing in equal installments from 1948 to 1957, inclusive, were re-offered to the public at prices yielding from 0.90 per cent to 1.75 per cent, according to maturity. (See the *Railway Age* for January 18, page 210.)

ALTON.—*Reorganization Managers Restored.*—An order by Federal Judge John P. Barnes, at Chicago, which dismissed two reorganization managers of this road and appointed two others, was reversed there last week by the United States circuit court of appeals. The court held that Judge Barnes was without authority to remove A. Bradley Eben and Roy D. Keehn, Chicago attorneys, who were dismissed on November 22. In removing the managers, Judge Barnes had declared that they had failed to give assurance that the reorganization plan would be carried out with "proper and necessary expedition." He appointed as their successors, Claude A. Roth, former trustee for the Chicago & North Western, and William T. Farlicy, vice-president and general counsel for the C. & N. W. John E. Gavin, Chicago attorney, and one of the previous group of managers, was reappointed. The new decision, brought about through an appeal filed by counsel for the bondholders' protective committee for 3 per cent Chicago & Alton refunding mortgage bonds, restores the original reorganization managers.

CHESAPEAKE & OHIO.—*Equipment Trust Certificates*—This road has sold, subject to Interstate Commerce Commission approval, $2,300,000 of equipment trust certificates to Halsey, Stuart & Co. and associates on a bid of 99.129 for a 1½ per cent interest rate, representing an interest cost to the C. & O. of about 1.665 per cent. The certificates, dated February 15, 1947, and maturing in equal installments from 1948 to 1957, inclusive, were re-offered to the public at prices yielding from 0.95 per cent to 1.80 per cent, according to maturity. (See the *Railway Age* for January 18, page 211.)

CINCINNATI, NEW ORLEANS & TEXAS PACIFIC.—*Equipment Trust Certificates.*—This road has sold, subject to Interstate Commerce Commission approval, $1,700,000 of series K equipment trust certificates to Halsey, Stuart & Co. and assocates on a bid of 99.107 for a 1½ per cent interest rate. The certificates, dated February 15, 1947, and maturing in equal installments from 1948 to 1957, inclusive, were re-offered to the public at prices yielding from 0.95 per cent to 1.80 per cent, according to maturity. (See the *Railway Age* for January 18, page 211.)

MISSOURI-KANSAS-TEXAS. — *Equipment Trust Certificates.*—This road has applied to the Interstate Commerce Commission for authority to assume liability for $3,900,000 of equipment trust certificates to be issued in connection with the financing of a $4,875,000 equipment-acquisition program. The following equipment would be acquired: From the Electro-Motive Division of the General Motors Corporation—one 4,000-hp. Diesel-electric road passenger locomotive for $409,266, and 7 4,500-hp. Diesel-electric road freight locomotives at $434,618 each; from the Pullman-Standard Car Manufacturing Company—7 sleeping cars at $112,290 each, 3 coaches at $84,748 each, 1 dining car for $125,570, 1 observation-lounge-sleeper for $126,441, 1 coach-lounge-buffet car for $97,332, and 1 mail-baggage car for $58,172. The certificates would be sold on the basis of competitive bids with the inter-

est rate specified in such bids. They would mature in 15 equal annual installments beginning March 1, 1948.

MISSOURI PACIFIC.—*Petition Against Reorganization Plan.*—In a move to discard the present reorganization plan of this road and to draft a new one, six groups of major security holders of the M. P. this week filed a motion in the circuit court of appeals, at Kansas City, Mo., to have the present plan returned to the federal district court at St. Louis, Mo. Attorneys for the group stated that the road had $16,000,000 in "free cash," and that its "greatly improved" financial condition should be taken into consideration as a basis for review of the plan which was approved last year. The proposed new plan would retain some equity for the stockholders, whose interests are wiped out under the present plan. The court took the case under consideration for a decision later.

MISSOURI-KANSAS-TEXAS.—*Loan.*—This road has arranged to borrow $5,000,000 from the Republic National Bank of Dallas, Texas. The loan, which carries an interest rate of 2¾ per cent, is to be secured by prior lien 4 per cent series F. mortgage bonds and will be used to purchase outstanding first mortgage bonds of the Missouri, Kansas & Texas and/or Katy prior lien mortgage bonds. (See the *Railway Age* for January 11, page 164.)

NEW YORK CENTRAL.—*Acquisition of Stock.*—The Alleghany Corporation, which has been engaged in the purchase of this company's common stock over a period of several weeks, was reported this week to have obtained over 300,000 shares, or about 4.8 per cent of the total outstanding. An Interstate Commerce Commission order in the proceeding in which Alleghany was authorized to exercise control of the Chesapeake & Ohio, Pere Marquette, and New York, Chicago & St. Louis requires it to deposit with a trustee any stock of other railroads subsequently acquired by it.

NEW YORK, SUSQUEHANNA & WESTERN. — *Annual Report.* — Operating revenues of this road in 1946 totaled $4,135,872, compared with $4,448,548 in the preceding year. Operating expenses amounted to $3,475,298, compared with $2,778,722. Net available for bond interest showed a deficit of $23,269 compared with a net income of $657,304.

The circuit court of appeals recently set aside the judgment of a district court that this road was not entitled to disaffirm the trackage rights at its Edgewater, N. J., terminal given to the New York Central in 1904 and held the matter should be determined not by the court but by the Interstate Commerce Commission. The New York Central has asked for a rehearing in the Circuit Court. Although no substantial objection to the road's plan of reorganization as recommended by the I.C.C. has been filed, according to Henry K. Norton, trustee for the Susquehanna, the district court in which reorganization proceedings are pending has indicated that any further action on the plan should be postponed until the New York Central matter is settled.

PENNSYLVANIA.—*Equipment Trust Certificates.*—This road has sold, subject to Interstate Commerce Commission approval, $14,970,000 of series R equipment trust certificates to Halsey, Stuart & Co. and associates on a bid of 99.209 for a 1⅞ per cent interest rate, representing an interest cost to the Pennsylvania of about 1,974 per cent. The certificates, dated February 1, 1947, and maturing in equal installments from 1948 to 1962, inclusive, were reoffered to the public at prices yielding from 1 per cent to 2.15 per cent, according to maturity. (See the *Railway Age* for January 18, page 211.)

WHEELING & LAKE ERIE.—*Equipment Trust Certificates.*—This road has applied to the Interstate Commerce Commission for authority to assume liability for $1,680,000 of equipment trust certificates to finance in part the acquisition of 750 60-ton, all-steel hopper cars at a total cost of $2,107,500. The certificates would be sold on the basis of competitive bids with the interest rate specified in such bids. They would mature over a 10-year period in 20 equal semi-annual installments beginning September 1.

Average Prices Stocks and Bonds

	Jan. 28	Last week	Last year
Average price of 20 representative railway stocks..	50.73	49.03	65.16
Average price of 20 representative railway bonds..	92.42	91.35	102.28

Dividends Declared

Chattahoochee & Gulf. — $1.25, semi-annually, payable January 20 to holders of record January 14.

Dallas Terminal.—common, 35¢; 7% preferred, $1.75, quarterly, both payable February 1 to holders of record January 21.

Erie.—$5.00 preferred, $1.25, quarterly, payable March 1 to holders of record February 14; $5.00 preferred, $1.25, quarterly, payable May 31 to holders of record May 16; $5.00 preferred, $1.25, quarterly, payable August 30 to holders of record August 15; $5.00 preferred, $1.25, quarterly, payable December 1 to holders of record November 15.

Erie & Kalamazoo.—$1.50, semi-annually, payable February 1 to holders of record January 17.

International of Central America. — 5% preferred (accum.), $1.25, payable February 15 to holders of record February 3.

Louisville, Henderson & St. Louis. — common, $4.00, semi-annually, payable February 15 to holders of record February 1; common, $4.00, semi-annually, payable August 15 to holders of record August 1; 5% non-cum preferred, $2.50, semi-annually, payable February 15 to holders of record February 1; 5% non-cum preferred, $2.50, semi-annually, payable August 15 to holders of record August 1.

North Carolina.—7% guaranteed, $3.50, semi-annually, payable February 1 to holders of record January 21; 7% guaranteed, $3.50, semi-annually, payable August 1 to holders of record July 21.

Peoria & Bureau Valley.—$2.50, semi-annually, payable February 10 to holders of record January 24.

Reading.—4% non-cum 1st preferred, 50¢, quarterly, payable March 13 to holders of record February 20.

Construction

ERIE.—This road has awarded a contract to the Bates & Rogers Construction Corporation, Chicago, for work on a passenger station and retaining wall at Akron, Ohio. The approximate cost of the project will be $217,000.

Abandonments

Won't Make Parent "Protect" Employees of Subsidiary

The Interstate Commerce Commission's policy of not imposing employee-protection conditions in cases which involve the abandonment of an entire line applies to separately-operated subsidiaries of railroad systems as well as to independent roads. This was pointed up recently when the commission rejected contentions of the Brotherhood of Railway Clerks and refused to make the Texas & Pacific responsible for employees of its former subsidiary, the Cisco & Northeastern, which ceased operation in March, 1942.

The commission decision came in Division 4's report on further hearing in the Finance Docket No. 13449 proceeding which was reopened in December, 1944, in response to the B. of R. C. petition. The prior report of January, 1942, authorized the C. & N. to abandon its entire line upon the understanding that the commission would retain jurisdiction on the matter of employee-protection conditions pending final determination by the United States Supreme Court of commission authority to impose such conditions in abandonment cases. Such final determination was made on March 2, 1942, when the court held, in *I. C. C. v. Ralway Labor Assn.*, 315, U. S. 373, that the commission did have such authority.

The B. of R. C. petitione, as the commission read it, asked "in effect" that employees of the former C. & N. who were adversely affected be protected by the imposition of conditions against the T. & P. In making that plea the brotherhood contended that (1) the C. & N. was controlled by the T. & P. through stock ownership; (2) the C. & N., although separately operated, was part of the T. & P. System and the seniority of employees applied to positions on the lines of both carriers; (3) the two carriers "for all practical purposes" were one company; and (4) the C. & N. was a "mere branch line" of the T. & P. "Under such circumstances," the union argued, "the case actually involves the abandonment of a branch line rather than the abandonment of an entire line of railroad."

The commission, observing that the C. & N.'s existence terminated several months prior to the union's petition, said that "it seems clear that any order entered against it would be a nullity." "The petitioners," it added, "are requesting that we impose the conditions against the Texas & Pacific, which is not a party to the proceeding. Obviously any order which we might enter against it . . . also would be unenforceable. We are not convinced that even though our authority to hold the Texas & Pacific responsible for the employee obligations of the respondent were not questioned, it would be a proper exercise of administrative discretion in this instance to initiate proceedings for the purpose of making the Texas & Pacific a party in order that we might impose against it the Burlington conditions."

The majority report represents the view

of Commissioners Mahaffie and Miller. Commissioner Rogers, the other member of Division 4, filed a dissenting opinion in which he said he would impose employee-protection conditions on the T. & P. That the C. & N. was regarded as part of the T. & P. system for personnel purposes, he said, "is made plain by the fact that its employees had joint seniority rights with employees of the Texas & Pacific and the latter's other subsidiaries under an agreement signed only with the parent company."

Railway Officers

EXECUTIVE

Holly Stover, president of the Chicago & Eastern Illinois since 1944, with headquarters at Chicago, has announced his intention to retire on May 9.

Howard E. Simpson, assistant vice-president in charge of traffic of the Baltimore & Ohio, has been elected vice-president in charge of traffic, with headquarters as before at Baltimore, Md., succeeding **Golder Shumate,** who has retired after nearly a

Howard E. Simpson

half century of service. Mr. Simpson was born at Jersey City, N. J., on March 15, 1896, and entered the service of the Central of New Jersey in 1912 as a clerk. During World War I he served in the United States Navy, returning in May, 1919. The following year he became a rate clerk for the Central of New Jersey and in 1925 he was appointed advertising agent. In 1926 Mr. Simpson became division passenger agent at Newark, N. J., and later that year he was promoted to general eastern passenger agent at New York, subsequently becoming assistant general passenger agent. Mr. Simpson went with the Baltimore & Ohio in 1931 as general eastern passenger agent at New York and five years later he became assistant to the general passenger traffic manager at Baltimore. In 1941 he was appointed assistant passenger traffic manager of the system, and in December, 1943, he was promoted to general passenger traffic manager. Mr. Simpson was appointed assistant vice-president in charge of both freight and passenger traffic in February, 1946.

Dana C. Douglass, executive vice-president and director of the Maine Central and the Portland Terminal, with headquarters at Portland, Me., has retired after more than 52 years of service. Mr. Douglass was born at Wales, Me., and started his railroad career in July, 1894,

Dana C. Douglass

as a stenographer in the office of the general passenger agent of the Maine Central. In 1898 he was appointed secretary to the general manager and in 1910 he became assistant to the general manager. In July, 1913, he was appointed assistant to the president and in October, 1913, he became general manager of the Maine Central and the Portland Terminal. During World War I he was federal manager of the two properties under government control. In 1920 he was named vice-president and general manager and in March, 1933, he became executive vice-president.

H. W. Schotter, treasurer of the Pennsylvania system, with headquarters at Philadelphia, Pa., has been promoted to assistant vice-president in charge of finance, with the same headquarters.

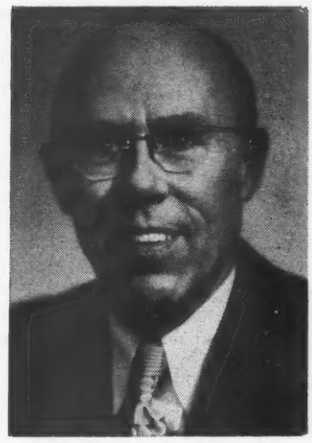
Herman T. Frushour, general manager of the New York zone of the Pennsylvania, with headquarters at New York, has been appointed assistant vice-president and chief engineer, with the same headquarters.

E. Spencer Miller, general counsel of the Maine Central, the Portland Terminal and the Maine Central Transportation Company, with headquarters at Portland, Me., has also been named vice-president. Mr. Miller will handle corporate matters and will continue as head of the legal department.

FINANCIAL, LEGAL AND ACCOUNTING

James F. Wright, member of the law firm of Rawlins & Wright, Chicago, has been appointed general attorney of the Baltimore & Ohio at Baltimore, Md., succeeding **Harry H. Byrer,** who retired on January 1, after 24 years of service with that road. **Robert J. Wilde** and **Sydney R. Prince, Jr.,** assistant general attorneys at Baltimore, have been appointed assistant general solicitors. **Robert Schwebel,** division attorney, has been appointed general attorney, with headquarters as before at New York. **James E. Jones,** assistant division attorney at New York, has been appointed assistant general attorney there.

Irving Hugh Cooper, whose appointment as auditor of freight accounts of the Florida East Coast at St. Augustine, Fla., was reported in the *Railway Age* of January 11, was born on September 12, 1896, at Brockport, N. Y. Mr. Cooper was graduated from the primary department of Brockport State Normal School in 1912 and from Hamilton (Ont., Canada) Collegiate Institute in 1915. He entered railroad service on July 1, 1915, as messenger in the general offices of the Buffalo, Rochester & Pittsburgh (now Baltimore & Ohio at Rochester, N. Y., subsequently serving in the interline division of the accounting department. He was later promoted to assistant head clerk of the rate department and on January 17, 1921, he went with the Florida East Coast as expert freight rate and division clerk in the the general offices at St. Augustine, Fla. He subsequently became head clerk of the rate and division bureau, holding that posi-



Irving Hugh Cooper

tion until July 1, 1946, when he was appointed acting auditor of freight accounts. He was appointed auditor of freight accounts at St. Augustine on January 1. During World War I Mr. Cooper served in the Engineering Corps.

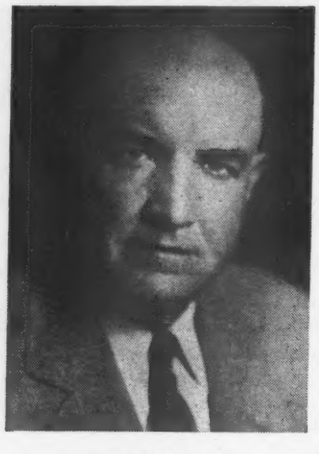
Paul Drewry Fox, general auditor of the Pennsylvania system, with headquarters at Philadelphia, Pa., has been elected treasurer of the system, succeeding **H. W. Schotter,** whose promotion to assistant vice-president in charge of finance is reported elsewhere in these columns. Mr. Fox was born on October 8, 1908, at Richmond, Va., and was graduated from the Virginia Military Institute (B.S. in civil engineering, 1930). He also did post-graduate study in accounting at the University of Pennsylvania. Mr. Fox entered the services of the Pennsylvania in 1930 as assistant in the engineering corps at Wilmington, Del., later serving in that capacity on the Williamsport, Philadelphia and Atlantic divisions until 1932,

when he joined the Standard Oil Company of New Jersey. In 1934 he returned to the Pennsylvania as assistant supervisor of track, serving successively on the Philadelphia, Tyrone, Altoona and Middle divisions. In 1935 he was assigned to special duty

Paul Drewry Fox

in the office of the vice-president and comptroller, and he became supervisor of track at Warren, Pa., in 1937. Mr. Fox returned to the office of the vice-president and comptroller the same year, where in 1939 he was advanced to assistant to the comptroller. He was promoted to auditor of disbursements in 1941 and to deputy controller in 1943, maintaining the latter position until January, 1946, when he was appointed general auditor.

H. G. Hedrick, whose promotion to general solicitor of the Southern at Washington, D. C., was reported in the *Railway Age* of January 11, was born on December 23, 1889, in Davidson count, N. C. He received his higher education at Trinity College, Trinity College Law School, and at Harvard Law School. Mr. Hedrick subse-



H. G. Hedrick

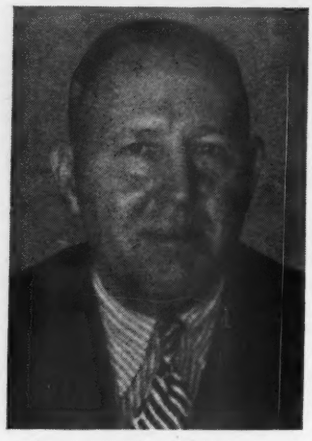
quently taught law at Trinity College and engaged in the general practice of law. In 1927 he was appointed assistant division counsel of the Southern at Durham, N. C., and in 1942 he was promoted to general attorney at Washington. He was appointed assistant general solicitor in May, 1945, the position he held until his recent promotion to general solicitor.

OPERATING

James R. Mathews, chief mechanical inspector of the Pullman Company, with headquarters at Chicago, has been appointed assistant mechanical superintendent, with the same headquarters.

W. C. Fox, trainmaster of the Chesapeake & Ohio at Strathmore, Va., has been transferred to the Mountain subdivision, with headquarters at Clifton Forge, succeeding **L. C. Cagle,** who has been appointed terminal trainmaster, Clifton Forge terminal, at Clifton Forge, Va.

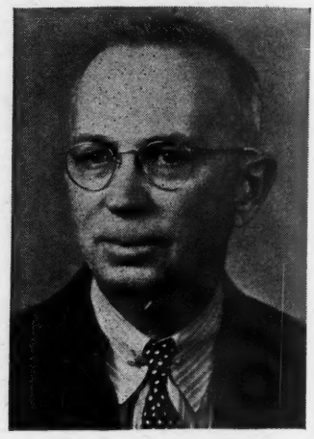
Robert F. Williams, whose promotion to terminal superintendent of the Southern Pacific, with headquarters at Houston, Tex., was reported in the *Railway Age* of December 21, 1946, was born on March 19, 1897, at Tioga, Tex. He received his higher education at Austin College; the Houston Law School, from which he received his LL. B. degree in 1932; and the Military Engineers School. Mr. Williams entered railway service in 1915 with the Missouri-Kansas-Texas, serving until 1920 as telegraph operator and train dispatcher. For a short time during 1920 he was a train



Robert F. Williams

dispatcher for the Denver & Rio Grande (now Denver & Rio Grande Western), joining the Texas & New Orleans (part of the S. P. system) in the same year. He subsequently held positions as train dispatcher, chief train dispatcher, trainmaster and assistant superintendent. He held the latter position, with headquarters at Ennis, Tex., at the time of his promotion.

Robert C. Canady, whose promotion to division superintendent of the St. Louis-San Francisco, with headquarters at Enid, Okla., was reported in the *Railway Age* of January 4, was born on February 28, 1892, at Little Rock Mills, Tenn. He entered railway service in 1905 as a helper on the Southern and the Tennessee Central at Harriman, Tenn. He later served as train dispatcher on the following roads: 1907-1908, Cincinnati, New Orleans & Texas Pacific (part of the Southern system); 1908-1909, Missouri-Kansas-Texas, Parsons, Kan; in 1909, Atchison, Topeka & Santa Fe, Winslow, Ariz.; 1909-1911, Colorado & Southern, Cheyenne, Wyo.; 1911-1916, Colorado Springs & Cripple Creek District (now abandoned), Colorado Springs, Colo. In 1916 he joined the Frisco as night chief dispatcher at Birmingham, Ala., and from 1920 to 1925 he served as chief dispatcher and trainmaster at Enid. Mr. Canady was advanced to assistant superintendent there in the latter



Robert C. Canady

year, holding that position successively also at Oklahoma City, Okla., and Tulsa. He held the latter position at the time of his promotion.

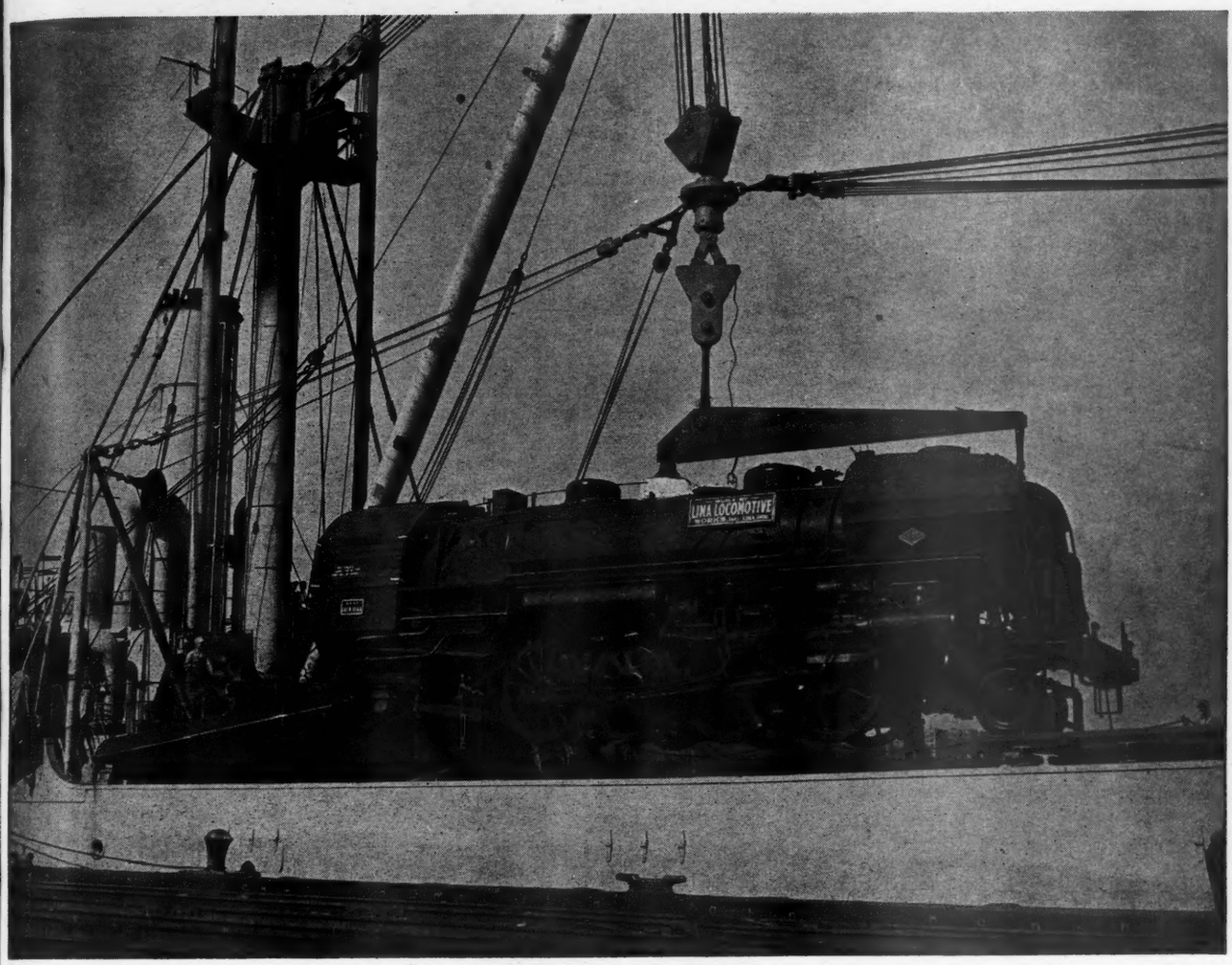
Andrew F. McIntyre, general superintendent of the Southwestern division of the Pennsylvania at Indianapolis, Ind., has been appointed general manager of the New York zone, with headquarters at New York, succeeding **Herman T. Frushour,** whose appointment as assistant vice-president and chief engineer at New York is reported elsewhere in these columns. **Charles E. Adams,** chief engineer at New York, has been appointed general superintendent of the Southwestern division at Indianapolis, succeeding Mr. McIntyre. **John W. Leonard,** superintendent of the Eastern division at Pittsburgh, Pa., has been appointed superintendent of passenger transportation at Philadelphia, Pa., suc-

Andrew F. McIntyre

ceeding **H. B. Stetson,** who has been appointed superintendent of the Monongahela division at Pittsburgh. Mr. Stetson succeeds **W. H. Mapp,** who has been transferred to the Columbus division at Columbus, Ohio, replacing **J. D. Fuchs,** who has been transferred to the Eastern division at Pittsburgh.

Mr. McIntyre was born at Canandaigua,

News Department continued on next left-hand page



STEAM POWER

to speed the rehabilitation of France

Eighty Lima-built steam locomotives have already been shipped to France to speed the rehabilitation of her war-torn railroads. These are part of an order for one hundred eighty 2-8-2 steam locomotives that have been specially designed to meet the requirements of this country whose transportation system was decimated by the war.

Illustrated above is one of these locomotives being loaded aboard the S.S. Belpamela at Pier 9 of the New York Central Railroad in Weehawken, New Jersey in September of last year.

LIMA LOCOMOTIVE WORKS — LIMA LOCOMOTIVE WORKS INCORPORATED — INCORPORATED, LIMA, OHIO

N. Y., on April 4, 1892, and began his railroad career at the age of 13 by working after school hours as a fruit handler on the old Northern Central (now part of the Pennsylvania). He subsequently studied telegraphy and in 1909 became an operator on the Elmira division of the Pennsylvania, advancing through various supervisory positions until 1935, when he was appointed superintendent of freight transportation of the Eastern region at Philadelphia. In 1940 he was appointed superintendent of passenger transportation of the Eastern region, which office he held at the time of entering military service on January 20, 1942, as a lieutenant colonel in the Reserve Corps of Engineers. He was rapidly promoted to colonel and brigadier general in the Army Transportation Corps. Mr. McIntyre served first in the Transportation branch of Supply, on the War Department General Staff; then as deputy director of operations, Transportation Corps; and finally, from November, 1943, until his honorable discharge on November 13, 1945, as Chief of the Rail Division on the staff of Major General Charles P. Gross, who was then the Army's Chief of Transportation. Shortly before returning to civilian life, Mr. McIntyre received the Army's Distinguished Service Medal for his part in supervising the movement and trans-shipment of 11,000,000 tons of ammunition and explosives without mishap of consequence and for other important contributions to the success of the Military Railway Service in various theaters of operation. He was appointed general superintendent of the Southwestern division of the Pennsylvania at Indianapolis in January, 1946.

Robert J. Stone, superintendent of the Mobile division of the Southern, with headquarters at Selma, Ala., has been appointed superintendent of the Northern division of the St. Louis-San Francisco, with headquarters at Fort Scott, Kan. He succeeds **Clyde K. Sims,** whose death is reported elsewhere in these columns.

W. F. Kirk, assistant general manager of the Missouri Pacific, with headquarters at St. Louis, Mo., retired from that position on January 31, following 46 years of service with the road. Mr. Kirk will go to Turkey as consultant and adviser to the Turkish minister of communications, and will assist in reorganizing that country's railway system.

Arthur E. Stoddard, assistant general manager of the Eastern district of the Union Pacific, with headquarters at Cheyenne, Wyo., has been promoted to general manager of that district, with headquarters at Omaha, Neb. He succeeds **Herman H. Larson,** whose photo and biographical sketch, in connection with his retirement, appeared in the *Railway Age* of January 18.

Ernesto L. Amador, whose promotion to assistant general manager of the National of Mexico, with headquarters at Mexico City, Mex., was reported in the *Railway Age* of December 14, 1946, was born on June 15, 1905, at Zacatecas, Zac., and was graduated from the University of Mexico in 1929. He entered railway service in the legal department of the National in 1928, and the following year became assistant lawyer. From 1936 to 1938 he served as lawyer in the road's personnel and finance departments, and in the latter year he was placed in charge of the legal department's civil bureau. He subsequently became second assistant to chief of the legal department, the position he hold at the time of his recent promotion.

Thomas E. Boyle, whose promotion to superintendent of freight transportation of the Pennsylvania's Western region, with headquarters at Chicago, was reported in the *Railway Age* of January 25, was born on June 5, 1907, at Crawfordsville, Ind., and was graduated from the University of Notre Dame in 1928, with a B.S. degree in civil engineering. He entered the service of the Pennsylvania on the St. Louis division in 1922, and was employed in the road's maintenance of way department during vacation periods throughout his college years. From 1928 to 1933 he served on the St. Louis, Toledo and Fort Wayne divisions, and in the latter year he was appointed assistant supervisor of the Columbus division. In 1934 he went to the New York division, and in 1941 he became division engineer of the Conemaugh

Thomas E. Boyle

division. He was transferred to the Philadelphia terminal division in 1943, remaining until October 1, 1945, when he was advanced to division superintendent, with headquarters at Indianapolis, Ind. Mr. Boyle held the latter position at the time of his new appointment.

Ira Davis, whose promotion to general manager of the Terminal Railroad Association of St. Louis, with headquarters at St. Louis, Mo., was reported in the *Railway Age* of January 18, was born on September 3, 1886, at Eldorado, Ill. He entered railroad service with the Illinois Central in 1904, and was furloughed from the road in 1905, during which time he worked as brakeman on the Missouri-Kansas-Texas at Parsons, Kan., Smithville, Tex., and San Antonio. Upon returning to the I. C. he was promoted in 1906 to conductor, which position he held until 1909, when he joined the Terminal as a switchman. He subsequently served as assistant yardmaster, yardmaster and night general yardmaster until 1916, at which time he was advanced to trainmaster. Mr. Davis was promoted to superintendent of all divisions on July 1, 1937, and to general superintendent on November 1, 1941, in which capacity he was serving at the time of his new appointment.

W. B. Simmons, whose promotion to assistant general superintendent of transportation of the Chicago, Burlington & Quincy, with headquarters at Chicago, was reported in the *Railway Age* of January 4, was born at Hiawatha, Kan., on January 21, 1895, and entered railway service in August, 1913, as a yard clerk of the Burlington at Kansas City, Mo. He was later promoted to night chief yard clerk and in July, 1917, he was furloughed for military service, returning to the Burlington at Kansas City in May, 1919, as chief yard clerk. In February, 1926, he was advanced to assistant yardmaster and in January, 1931, he was appointed general yardmaster at St. Joseph, Mo. Mr. Simmons was transferred to St. Louis in February, 1935, and in April, 1937, he was promoted to terminal trainmaster at Rock Island, Ill. Eight months later he was transferred to Lincoln, Neb., and in October, 1939, he was appointed trainmaster of the Aurora division, with headquarters at Aurora, Ill. Mr. Simmons was promoted to assistant superintendent of the La Crosse division, with headquarters at St. Paul, Minn., in October, 1941. In 1943 he was further advanced to superintendent of terminals, with headquarters at St. Louis, Mo., which position he held at the time of his recent promotion.

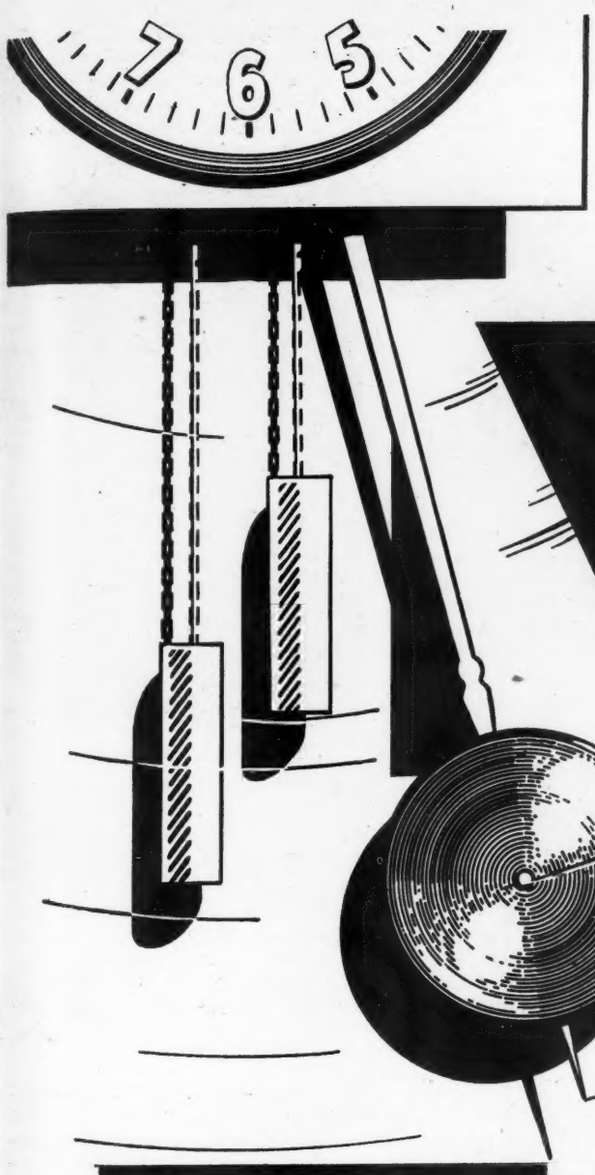
TRAFFIC

Otto Kopp, whose promotion to western freight traffic manager in charge of service and sales, Northern Pacific, with headquarters at Seattle, Wash., was reported in the *Railway Age* of January 25, was born on February 4, 1897, at Chicago. He entered railway service with the Chicago, Rock Island & Pacific in 1911, serving successively until 1913 as messenger boy, helper, clerk and operator. He sub-

Otto Kopp

sequently held positions with the Minneapolis, St. Paul & Sault Ste. Marie, the Marshall Wells Hardware Company, at Duluth, Minn., and the Great Northern. Joining the N. P. at Duluth, Minn., in 1923, Mr. Kopp advanced through positions as clerk, city freight agent and traveling

News Department continued on next left-hand page



IN 1/5 OF A SECOND

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Steam
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Valves on each end of each cylinder of an 80-inch-driver locomotive traveling at 75 mph go through their complete cycle in less than 1/5th of a second. During this fraction of a second, the cylinder must be filled, energy extracted from the steam at rates of up to 1500 hp, and the spent steam exhausted.

At this speed, flow area of passages, and particularly of port openings, is critical. The Franklin System of Steam Distribution provides fast-acting poppet valves and larger port openings. It provides late release, regardless of cutoff. It allows more steam at higher pressure to enter the cylinder, extracts more work from it, exhausts against lower back pressure, and traps less in compression. It increases the power of a locomotive by 19 to 30 per cent — or, when working at no greater power than the maximum for piston-valve locomotives, saves up to 30 and 40 per cent in fuel.

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freight agent, and in 1939 he was appointed assistant general freight agent at St. Paul, Minn. Later in that year he returned to Duluth in that position, remaining there until 1942, when he went to Seattle as general freight agent. He was serving in that capacity at the time of his new appointment.

Carl Jewell, whose promotion to general freight agent of the Nashville, Chattanooga & St. Louis, with headquarters

Carl Jewell

at Nashville, Tenn., was reported in the *Railway Age* of January 11, was born on July 27, 1896, at Kansas City, Mo. He began his railroad career in 1921 with the N. C. & St. L., and in 1923 was transferred as clerk to Denver, Colo. Mr. Jewell was promoted to chief clerk in the general agent's office at Kansas City in 1926, and the following year was further advanced to freight traffic agent there. Prior to his recent promotion he had been general agent at Kansas City since 1939.

G. W. Rodine, whose promotion to western passenger traffic manager of the Northern Pacific, with headquarters at Seattle, Wash., was reported in the *Railway Age* of January 25, was born in 1894, at Chicago, and began his railroad career there with the Atchison, Topeka & Santa

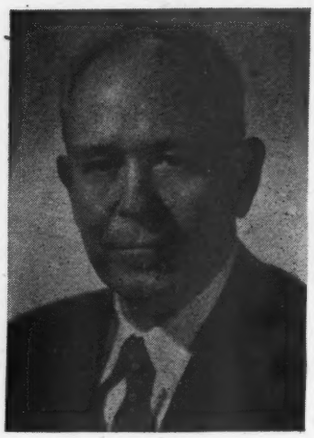
G. W. Rodine

Fe in 1913. He remained with that road until June, 1921, when he joined the N. P., holding various positions in the passenger department at Chicago. He served also as traveling passenger agent at Cleveland, Ohio, and at Milwaukee, Wis., and as special passenger representative at St. Paul, Minn. In 1926 he returned to Chicago as assistant general agent, passenger department, and was advanced to general agent, passenger department, in 1931. From 1941 to the time of his recent promotion, Mr. Rodine had been general passenger agent at Seattle.

J. F. Williams has been appointed general agent of the Seaboard Air Line at Baltimore, Md., succeeding **I. J. Hetherington,** who has been transferred to Philadelphia, Pa.

W. J. Moore has been appointed general agent of the Denver & Rio Grande Western, with headquarters at Grand Junction, Colo., succeeding **G. W. Yeager,** who has resigned.

Reavis T. DuBose, whose promotion to assistant freight traffic manager of the Missouri-Kansas-Texas, with headquarters at Dallas, Tex., was reported in the *Railway Age* of January 11, was born on April 26, 1890, at Milborn, Tex. He entered railway service in 1912 as a rate clerk with the Texas & Pacific at Dallas, and in 1918 he joined the Katy there in that position. Following military service during 1918 and 1919, Mr. DuBose held various

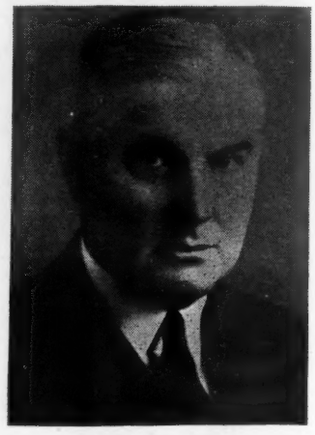


Reavis T. DuBose

clerical positions in the general freight office of the line at Dallas. He was promoted, in 1931, to assistant general freight agent, and from 1935 to the time of his present appointment he was general freight agent at Dallas.

Grady B. Riggan, whose promotion to assistant traffic manager of the Missouri Pacific, with headquarters at New Orleans, La., was reported in the *Railway Age* of January 11, was born on January 2, 1897, at Hamilton, Ala., and entered railway service in 1917 in the office of the superintendent of the Southern at Birmingham, Ala. He joined the Louisville & Nashville in the latter part of that year, and in 1918 he went into service of the United States Navy. Following his discharge he remained with the L. & N. until March 7, 1920, when he became a clerk with the M. P. at Birmingham. He was advanced to commercial agent there in 1926, and to general agent at Chattanooga, Tenn., in 1936. In 1941 he was promoted to division freight and passenger agent at Monroe, La., and remained there until 1943, when he was appointed general agent at Seattle, Wash. Mr. Riggan was serving in this capacity at the time of his new appointment on January 1.

Frank J. Berry, whose promotion to western traffic manager of the Northern Pacific, with headquarters at Seattle, Wash., was reported in the *Railway Age*



Frank J. Berry

of January 25, entered service of the N. P. as a station clerk at La Moure, N. D. He joined the road's traffic department in 1911, at Winnipeg, Man., where he was advanced to general agent in 1920. Mr. Berry was general agent at Spokane, Wash., from 1923 to 1929, at which time he was appointed assistant general freight agent at Seattle. In 1931 he was advanced to assistant general freight and passenger agent at Portland, Ore., the position he held at the time of his recent promotion.

George A. Remington, whose promotion to traffic manager of the Chicago & North Western, with headquarters at Omaha, Neb., was reported in the *Railway Age* of January 11, was born on June 1, 1882, at De Pere, Wis., and entered railway service in 1900 with the C. & N. W. as a clerk at Appleton, Wis. He later served

George A. Remington

as cashier at Marinette, Wis., and at Appleton, and in 1910 was appointed chief clerk at Omaha. Mr. Remington has served there continuously, advancing through positions as city agent, local agent and general

News Department continued on next left-hand page

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agent, freight department. He was promoted to assistant general freight and passenger agent in 1928, and in 1941 became general freight and passenger agent. Prior to his recent appointment, Mr. Remington had been assistant traffic manager since 1946.

Richard J. Sullivan, New England freight agent for the New York, Ontario & Western, has been appointed assistant freight traffic manager, sales and service, of the Central of New Jersey. Mr. Sullivan had been connected with the New York, Ontario & Western for the past eight years and prior to that was with the American-Hawaiian Steamship Company.

L. W. Altland, district freight agent of the Canadian Pacific, with headquarters at Minneapolis, Minn., has been transferred to St. Paul, Minn., where he will be in charge of a new office. He is succeeded by **A. W. Kelly,** district freight agent at Cincinnati, Ohio, who in turn is replaced by **I. M. Kiley,** district freight representative at Detroit, Mich. **J. H. Decker,** district freight agent at St. Louis, Mo., goes to Detroit, relieving Mr. Kiley. **T. E. Reuter,** district freight agent at Indianapolis, Ind., succeeds Mr. Decker, and, in turn, is succeeded by **J. C. Waddell.**

V. E. Straus, traveling freight and passenger agent of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Missoula, Mont., has been appointed division freight agent at Tacoma, Wash. He succeeds to the duties of **Harry Rowe,** assistant general freight agent, who has retired, following 40 years of service with the road. **H. J. Kidd,** export and import agent at Seattle, Wash., has been appointed general agent there, succeeding **George R. Webster,** who has been transferred to Missoula. Mr. Kidd is succeeded by **F. W. Watkins,** division freight and passenger agent at Aberdeen, Wash., who in turn is succeeded by **Harold D. Collingwood,** traveling freight and passenger agent, with headquarters at Seattle.

ENGINEERING & SIGNALING

D. H. Steiner has been appointed superintendent of signals and communications of the Chicago, Indianapolis & Louisville, with headquarters at LaFayette, Ind., succeeding **E. G. Stradling,** whose recent retirement was reported in the *Railway Age* of December 28, 1946. Mr. Steiner was formerly signal inspector of the Chicago, Milwaukee, St. Paul & Pacific, at Milwaukee, Wis.

James Sims Wearn, whose promotion to chief engineer maintenance of way and structures of the Western lines of the Southern at Cincinnati, Ohio, was reported in the *Railway Age* of January 25, was born at Charlotte, N. C., on November 24, 1900. Mr. Wearn attended the University of North Carolina, entering railroad service on July 1, 1918, and serving during summer vacations as rodman in the office of the resident engineer of the Southern at Charlotte. After serving two years with the North Carolina State Highway Department at Raleigh, N. C., Mr. Wearn returned to the service of the Southern as a junior engineer at Knoxville, Tenn.

In May, 1924, he was appointed assistant engineer in the office of the engineer maintenance of way and structures of the Southern, becoming track supervisor of the

James Sims Wearn

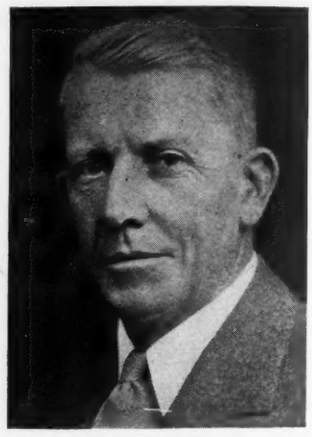
Coster division at Knoxville, in 1928. Mr. Wearn was transferred to the Knoxville division at Knoxville in June, 1929, being appointed assistant roadmaster of that division in 1935. He was promoted to roadmaster of the Memphis division at Sheffeld, Ala., in 1936, which position he held until January 1, 1944, when he became assistant chief engineer maintenance of way and structures of the Central lines at Knoxville, in which capacity he was serving at the time of his recent promotion.

J. Edward Griffith, division engineer of the Southern at Richmond, Va., has been promoted to assistant chief engineer maintenance of way and structures at Knoxville, Tenn., to succeed **J. S. Wearn,** whose promotion to chief engineer maintenance of way and structures at Cincinnati, Ohio, was reported in the *Railway Age* of January 25. Mr. Griffith was born

J. Edward Griffith

on December 3, 1902, at Charlotte, N. C., and attended the public schools of that city. He was graduated from North Carolina State College in 1926 and entered the service of the Southern in May, 1927, as a junior engineer at Charlotte, subsequently serving in engineering capacities at various points on the road. In August 1939, he was promoted to trainmaster at Charleston, S. C., later serving in a similar capacity at Columbia, S. C. He was appointed assistant roadmaster at Lawrenceville, Va., in April, 1944, and went to Richmond as division engineer in December, 1944.

W. C. Perkins, whose promotion to chief engineer of the Union Pacific, with headquarters at Omaha, Neb., was reported in the *Railway Age* of January 11, was born at Soldier, Idaho, on December 20, 1888, and was graduated by the University of Idaho in 1914 with the degree B. S. in civil engineering. He entered railroad service on September 21, 1916, with the Oregon Short Line (part of the Union Pacific), and served as draftsman and instrumentman until November 10, 1917, when he enlisted with the Twenty-third Engineers. Released from the armed forces in July, 1919, he returned to the Union Pacific, and subsequently served as instrumentman, assistant engineer, assistant roadmaster, and roadmaster, until January, 1929, when he was appointed division engineer on the



W. C. Perkins

Montana division, and later on the Utah division. In August, 1931, Mr. Perkins was appointed roadmaster of the Utah division, and in May, 1932, he became division engineer of the Kansas division. From January 1, 1933, to August 10, 1934, he served as roadmaster and general roadmaster on the O. S. L., returning on the latter date to the position of division engineer of the Kansas division. On January 1, 1937, Mr. Perkins was appointed district engineer, with headquarters at Salt Lake City, Utah, and served in that capacity until July 1, 1942, when he was promoted to system maintenance engineer, at Omaha, Neb. On February 1, 1946, he was advanced to assistant chief engineer, with the same headquarters, which position he held at the time of his recent promotion.

H. W. Flemming, whose appointment as assistant chief engineer of the Canadian National system, wih headquarters at Montreal, Que., was reported in the *Railway Age* of January 11, was born at Liverpool, N. S., on January 22, 1886, and was graduated from Dalhousie University, Halifax, N. S., in 1909, with a bachelor's degree in engineering. He entered railway service in the latter year as a rodman on the

News Department continued on next left-hand page

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Canadian Northern (now Canadian National) on construction between Toronto, Ont., and Ottawa, and the following year was promoted to resident engineer on construction of the line to James bay. He was transferred to Toronto-Ottawa construc-

H. W. Flemming

tion in 1912, and later to construction between Montreal, Que., and Hawkesbury, Ont. He was advanced to inspecting engineer maintenance of the Central region, at Toronto, in 1921, and to division engineer at Hornepayne, Ont., in 1924, transferring to Montreal in 1928. In 1943 he was promoted to district engineer, at North Bay, Ont., and a year later he went to Toronto in the same capacity. In 1945 Mr. Flemming was promoted to engineer maintenance of way at Toronto, and served in that capacity until January, 1946, when he was advanced to chief engineer of the Grand Trunk Western, at Detroit, the position he held at the time of his recent appointment.

Arthur W. Carlson, whose appointment as bridge engineer of the Western Pacific, with headquarters at San Francisco, Cal., was announced in the *Railway Age* of January 11, was born at Anaconda, Mont., on September 2, 1913, and was graduated

Arthur W. Carlson

by Montana State College in 1935 with the degree B. S. in engineering, and by the University of California in 1940 with the M. A. degree. During his college vacations, he worked as a carpenter, and from July, 1935, to October, 1937, he served as a draftsman with private companies and with the National Park Service at Havre, Mont. In December, 1937, Mr. Carlson entered the service of the Western Pacific as a draftsman in the engineering department at San Francisco, and served in that capacity until 1941, when he was appointed structural draftsman. In September, 1944, he was advanced to assistant bridge engineer, the position he held at the time of his recent promotion.

L. P. Drew, whose appointment as engineer of design and construction in the engineering department of the Union Pacific, with headquarters at Omaha, Neb., was reported in the *Railway Age* of January 11, was born at Clarion, Iowa, on July 7, 1891, and was graduated by Iowa State College in 1912 with the B. S. degree in civil engineering. He entered railroad service in 1910 as a bridge carpenter on the Oregon Short Line, and in September, 1912, he was appointed instrumentman and draftsman. After a short period of private employment, Mr. Drew returned to the O. S. L., subsequently serving as draftsman and assistant engineer

L. P. Drew

until December, 1923, when he was appointed bridge engineer of the Los Angeles & Salt Lake (now part of the U. P.). In 1933 he was appointed bridge inspector on the U. P. at Salt Lake City, Utah, and served in that capacity until he was named division engineer in 1941. In March, 1942, he was advanced to bridge engineer, with headquarters at Omaha, Neb., the position he held at the time of his recent promotion.

C. H. Gaylord has been appointed division engineer of the Oklahoma division of the Chicago, Rock Island & Pacific, with headquarters at El Reno, Okla., succeeding **Samuel L. McClanahan,** whose retirement was reported in the *Railway Age* of December 28, 1946. For the past several months Mr. Gaylord has been in charge of construction on the new line between Eldon, Iowa, and Paris. He was formerly division engineer of the Southern division, at Houston, Tex.

A. N. Laird, whose appointment as chief engineer of the Grand Trunk Western, with headquarters at Detroit, Mich., was reported in the *Railway Age* of January 11, was born at St. Marys, Ont., on March 6, 1892, and was graduated by the University of Michigan with the degree B. C. E. in 1914, and the degree M. S. in C. E. in 1916. He entered railroad service in June, 1911, as a draftsman on the Pere Marquette, at Detroit, and served in various

A. N. Laird

capacities until October, 1914, when he became a member of the faculty of the University of Michigan. In September, 1916, he became an instructor at the University of Toledo, and in September, 1917, associate professor of civil engineering. Mr. Laird entered the service of the Grand Trunk in 1919, as chief draftsman at Detroit, and was appointed assistant engineer in 1920. In 1929 he was advanced to bridge engineer, the position he held at the time of his recent promotion.

T. H. Jenkins, whose promotion to bridge engineer of the Grand Trunk Western, with headquarters at Detroit, Mich., was reported in the *Railway Age* of January 11, was born at Toronto, Ont., on May 1, 1902, and was graduated by the University of Toronto in 1925 with a bachelor's degree in civil engineering. He entered the service of the Grand Trunk Western on November 1, 1926, as a draftsman in the office of the chief engineer at Detroit. From 1928 to 1933 he served as designer and squad

T. H. Jenkins

leader on the Royal Oak (Mich.) to Pontiac relocation, and from 1933 to 1940 as designer and estimator on project assignments. In 1940 he was advanced to chief draftsman in the office of the chief

News Department continued on next left-hand page

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The Westinghouse "AP" Mechanical Decelostat does just that when a wheel starts to slip during brake application. The instant that a wheel begins to lose rail adhesion, this constant guardian detects it and momentarily relieves brake pressure on that particular wheel. Thus, the wheel is kept turning and doing its best job of effective retardation under existing conditions.

The "AP" Decelostat becomes even more important with today's higher train speeds, closer schedules, and increased braking forces required to control trains safely. Here, wheel slip detection is doubly imperative, because a slip which develops into a slide means *that* wheel is not doing its best job of retardation. "AP" Decelostat will detect that "slip" and keep the wheel rolling—assuring efficient braking.

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Speed Governor Control . . . for regulating brake forces to wheel speeds.

"AP" Mechanical Decelostat . . . for wheel slip detection to keep the wheels rolling.

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WILMERDING, PA.

engineer, the position he held at the time of his recent promotion.

J. E. South, assistant engineer of bridges of the Pennsylvania, has been promoted to engineer of bridges and buildings, with headquarters at Philadelphia, Pa., succeeding **Allen R. Wilson,** who has retired. **A. H. Hillman** has been appointed assistant engineer of bridges and **A. P. Kouba** has been appointed office engineer in the office of the chief engineer.

Mr. Wilson was born at Bordentown, N. J., on January 15, 1877, and received his mechanical engineering degree from Drexel Institute, Philadelphia, in 1896. He has been associated with the Pennsylvania's engineering department for almost 45 years, serving as engineer of bridges and buildings since 1927. Mr. Wilson is a former president of the American Railway Engineering Association.

H. M. Schudlich, whose appointment as engineer of water service of the Northern Pacific, with headquarters at St. Paul, Minn., was reported in the *Railway Age* of January 11, was born at Pemberville, Ohio, on March 8, 1905, and received his higher technical training at the University of Minnesota. He entered the service of the Northern Pacific on September 15, 1928, as a water inspector, and served in that capacity at various points in North Dakota and Montana. On October 1, 1936, he was appointed chief water inspector, with headquarters at Billings, Mont., where he served until March 16, 1942, when he was advanced to chief chemist, with the same headquarters, the position he held at the time of his recent appointment.

B. H. Prater, whose appointment as engineering consultant of the Union Pacific, with headquarters at Omaha, Neb., was reported in the *Railway Age* of January 11, was born at Bingham, Ill., on November 11, 1881, and was graduated by the University of Illinois in 1903 with the B. S. degree in civil engineering. During the years 1903 and 1904 he served as instructor in surveying and as assistant in bridge design at the University of Illinois. He entered the service of the Oregon Short Line (part of the Union Pacific) in 1906 as a draftsman, and subsequently served as chief draftsman, office engineer, and engineer of buildings. In 1919 he was appointed engineer maintenance of way, with headquarters at Pacatello, Idaho, and in 1925 he became chief engineer of the O. S. L., at Salt Lake City, Utah. In 1932 he became district engineer of the U. P., at Salt Lake City, and in January, 1937, he was advanced to chief engineer, with headquarters at Omaha, the position he held at the time of his recent appointment.

E. M. Grime, whose retirement as engineer of water service of the Northern Pacific, with headquarters at St. Paul, Minn., was reported in the *Railway Age* of January 11, was born at Minneapolis, Minn., on July 1, 1876, and graduated from the University of Minnesota in 1900. He entered railway service on the Chicago Great Western in June of that year and from then until April, 1904, served consecutively as draftsman, instrumentman and assistant engineer on grade revision, bridge work and maintenance, on the latter date being promoted to division engineer, which position he held until May, 1907, when he became building inspector on the Northern Pacific. He left that road in January, 1908, to serve as an assistant engineer on the Stockyards Terminal railway, where he remained until June, 1908, when he returned to the Northern Pacific as an assistant engineer. He was appointed supervisor bridges and buildings in March, 1909, and in August, 1925, he was advanced to engineer of water service, at St. Paul, which position he held at the time of his retirement.

MECHANICAL

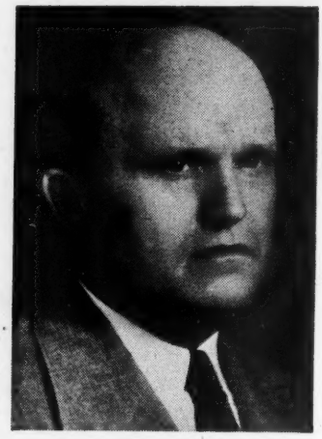
Thomas W. Brown has been appointed chief water chemist of the Illinois Central, with headquarters at Chicago, a newly created position. Mr. Brown's former position of water chemist has been abolished.

John Cannon, whose appointment as mechanical superintendent of the Pullman Company, with headquarters at Chicago, was reported in the *Railway Age* of January 25, has been associated with the mechanical department for 33 years. Mr. Cannon joined Pullman in 1913 as an electrician at Wilmington, Del., and later became an inspector. He was advanced to

John Cannon

manager of the company's shops at Wilmington in 1936, and in 1942 he was transferred to Chicago, where he became junior assistant mechanical superintendent. In his new position, Mr. Cannon will direct the activities of Pullman's six major shops in Chicago, St. Louis, Mo., Muffalo, N. Y., Atlanta, Ga., Wilmington, Del., and Richmond, Cal.

R. W. Rogers, whose appointment as chief mechanical officer of the Seaboard Air Line at Norfolk, Va., was reported in the *Railway Age* of January 25, was born at Culloden, Ga., on December 4, 1887. He entered railroad service on July 1, 1907, as bookkeeper in the office of the auditor of the Atlanta & West Point. In March, 1908, Mr. Rogers went with the Seaboard Air Line as file and voucher clerk at Abbeville, S. C., subsequently serving as roadway clerk at Monroe, N. C., until October, 1909, when he became chief clerk to division engineer at Atlanta, Ga. In March, 1911, he was appointed chief clerk to superintendent at Atlanta, and in March, 1924, he became trainmaster at Atlanta. He was promoted to superintendent of the Georgia division at Atlanta in July, 1926, and was transferred to the



R. W. Rogers

North Carolina division at Hamlet, N. C., in September, 1934. In May, 1938, Mr. Rogers was promoted to assistant general manager at Savannah, Ga., being transferred in the same capacity to Norfolk in June, 1939, which position he held until his recent appointment as chief mechanical officer.

SPECIAL

C. W. Stanley, whose appointment as director of personnel of the Chicago, Indianapolis & Louisville, with head quarters at LaFayette, Ind., was reported in the *Railway Age* of January 25, began his career with the Monon in 1910 as a stenographer and clerk to the chief dispatcher and trainmaster. He subsequently held positions as clerk in the timekeeper's office, timekeeper and supervisor of the wage bureau. In October, 1942, he left the road for a position with the Brotherhood of Railway Trainmen, at Cleveland, Ohio. In his new position Mr. Stanley will supervise employment problems.

OBITUARY

Joseph H. Butler, who retired in August, 1944, as traffic executive of the Railway Express Agency at New York, died on January 28 at the White Plains (N. Y.) hospital, after a brief illness. He was 72 years old.

Clyde K. Sims, superintendent of the Northern division of the St. Louis-San Francisco, with headquarters at Fort Scott, Kan., died suddenly at Springfield, Mo., on January 6. Mr. Sims, who was recently transferred from Enid, Okla., to Fort Scott, was born on December 9, 1892, at Galesburg, Ill. He entered railway service in 1908 with the coast lines of the Chicago, Milwaukee, St. Paul & Pacific, serving until 1918 as stenographer, clerk, cashier, telegrapher and agent. Since that date Mr. Sims had been associated with the Frisco as clerk, telegrapher, agent, train dispatcher, chief dispatcher, trainmaster and assistant superintendent.

A table of operating expenses and revenues appears on the next left-hand page

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Compiled from 129 monthly reports of revenues and expenses representing 133 Class I steam railways

(Switching and Terminal Companies Not Included)

FOR THE MONTH OF NOVEMBER, 1946 AND 1945

Item	United States		Eastern District		Southern District		Western District	
	1946	1945	1946	1945	1946	1945	1946	1945
Miles of road operated at close of month	227,205	228,119	55,814	55,993	43,248	43,322	128,143	128,804
Revenues:								
Freight	$522,805,723	$463,682,104	$206,976,110	$176,807,810	$99,435,527	$91,940,803	$216,394,086	$194,933,491
Passenger	85,510,292	145,555,281	41,345,007	59,329,174	13,923,868	23,588,274	30,241,417	62,637,831
Mail	11,237,554	10,668,727	3,953,930	3,786,261	1,943,983	1,838,805	5,339,641	5,043,661
Express	8,333,337	10,661,860	1,016,119	2,478,428	1,354,271	1,737,111	5,962,947	6,446,321
All other operating revenues	30,273,289	30,613,204	14,041,894	13,087,443	3,873,763	4,297,141	12,357,632	13,228,620
Railway operating revenues	658,160,195	661,181,176	267,333,060	255,489,116	120,531,412	123,402,134	270,295,723	282,289,926
Expenses:								
Maintenance of way and structures	93,440,948	112,673,335	35,240,923	38,568,962	18,762,635	19,575,727	39,437,390	54,528,646
Depreciation	10,126,039	10,019,072	4,400,329	4,341,030	1,635,414	1,586,088	4,090,296	4,091,954
Retirements	2,066,392	3,583,988	542,012	335,119	92,370	362,284	1,432,010	2,886,585
Deferred maintenance	*398,140	*217,800	*136,686	104,694	*6,687	.....	*254,767	*322,494
Amortization of defense projects	66,191	7,008,968	*22,046	99,235	19,210	341,310	69,027	6,568,423
Equalization	*2,241,603	*1,812,891	*1,133,796	*154,715	*201,990	*1,490,432	*905,817	*167,744
All other	83,822,069	94,091,998	31,591,110	33,843,599	17,224,318	18,776,477	35,006,641	41,471,922
Maintenance of equipment	123,368,520	149,955,104	54,163,166	50,805,119	22,752,805	24,751,516	46,452,549	74,398,469
Depreciation	18,519,384	18,019,196	7,638,784	7,538,396	3,782,649	3,613,289	7,097,951	6,867,511
Retirements	*24,200	*20,897	*7,128	*762	*7,346	*8,372	*9,726	*11,763
Deferred maintenance and major repairs	*345,831	*87,182	*1,493	*4,499	*85,224	.....	*259,114	*82,683
Amortization of defense projects	1,169,101	32,820,047	499,744	2,344,092	198,682	3,026,122	470,675	27,449,833
Equalization	*147,057	*10,413	14,152	*1,054	*174,954	*17,605	13,745	8,246
All other	104,197,123	99,234,353	46,019,107	40,928,946	19,038,998	18,138,082	39,139,018	40,167,325
Traffic	13,786,843	12,133,698	4,848,352	4,228,035	2,656,593	2,408,198	6,281,898	5,497,465
Transportation—Rail line	275,787,034	245,487,300	120,722,597	105,371,406	46,998,779	41,682,509	108,065,658	98,433,385
Transportation—Water line	.....	.....	.....	.....	.....	.....	.....	.....
Miscellaneous operations	10,807,151	10,663,954	3,989,160	3,934,682	1,308,174	1,487,136	5,509,817	5,242,136
General	18,890,504	17,647,949	7,386,707	7,242,166	3,827,590	3,578,760	7,676,207	6,827,023
Railway operating expenses	536,081,000	548,561,340	226,350,905	210,150,370	96,306,576	93,483,846	213,423,519	244,927,124
Net revenue from railway operations	122,079,195	112,619,836	40,982,155	45,338,746	24,224,836	29,918,288	56,872,204	37,362,802
Railway tax accruals	45,028,778	40,050,448	16,861,651	16,373,618	10,880,474	13,930,445	17,286,653	9,746,385
Pay-roll taxes	21,240,514	18,382,359	9,047,416	7,628,348	3,831,504	3,223,259	8,361,594	7,530,752
Federal income taxes	1,739,044	*1,804,002	*985,183	*1,852,410	2,580,689	6,633,440	143,538	*6,585,032
All other taxes	22,049,220	23,472,091	8,799,418	10,597,680	4,468,281	4,073,746	8,781,521	8,800,665
Railway operating income	77,050,417	72,569,388	24,120,504	28,965,128	13,344,362	15,987,843	39,585,551	27,616,417
Equipment rents—Dr. balance	9,507,609	8,001,132	4,938,973	2,421,386	*1,052,849	*213,718	5,621,485	5,793,464
Joint facility rent—Dr. balance	3,468,425	3,853,970	1,743,580	1,864,291	421,494	405,735	1,303,351	1,583,944
Net railway operating income	64,074,383	60,714,286	17,437,951	24,679,451	13,975,717	15,795,826	32,660,715	20,239,009
Ratio of expenses to revenues (per cent)	81.5	83.0	84.7	82.3	79.9	75.8	79.0	86.8

FOR ELEVEN MONTHS ENDED WITH NOVEMBER, 1946 AND 1945

Item	United States		Eastern District		Southern District		Western District	
	1946	1945	1946	1945	1946	1945	1946	1945
Miles of road operated at close of month	227,658	228,267	55,903	56,003	43,278	43,332	128,477	128,932
Revenues:								
Freight	$5,292,720,824	$6,128,921,990	$2,039,557,470	$2,249,886,312	$1,049,257,806	$1,144,207,797	$2,203,905,548	$2,734,827,881
Passenger	1,166,453,211	1,555,244,860	533,727,637	635,891,402	188,536,065	288,502,980	444,189,509	630,850,478
Mail	115,353,386	116,195,837	40,918,934	39,776,493	19,905,274	20,051,742	54,529,178	56,367,602
Express	83,627,800	135,922,126	7,397,175	38,294,454	13,257,628	19,679,180	62,972,997	77,948,492
All other operating revenues	331,916,862	348,643,152	153,398,196	150,828,162	42,992,281	48,595,338	135,526,385	149,219,652
Railway operating revenues	†6,990,072,083	†8,284,927,965	2,774,999,412	3,114,676,823	1,313,949,054	1,521,037,037	2,901,123,617	3,649,214,105
Expenses:								
Maintenance of way and structures	1,058,482,357	1,225,201,814	390,707,382	432,031,151	214,259,150	217,782,077	453,515,825	575,388,586
Depreciation	110,339,522	107,832,635	47,816,080	47,132,317	17,820,868	17,275,349	44,702,574	43,424,969
Retirements	10,579,033	14,252,927	2,779,776	2,810,019	1,329,961	1,828,977	6,469,296	9,613,931
Deferred maintenance	*5,020,407	*3,351,199	*1,362,963	*501,544	282,733	.....	*3,940,177	*2,849,655
Amortization of defense projects	397,691	58,368,433	43,822	7,881,026	137,163	8,502,023	216,706	41,985,384
Equalization	2,819,386	7,841,062	499,251	2,466,341	1,752,533	2,998,266	567,602	2,376,455
All other	939,367,132	1,040,257,956	340,931,416	372,242,992	192,935,892	187,177,462	405,499,824	480,837,502
Maintenance of equipment	1,344,514,007	1,684,501,932	575,538,289	629,884,996	246,794,354	323,205,427	522,181,364	731,411,509
Depreciation	202,606,492	197,992,054	85,007,354	83,651,835	40,701,409	39,538,342	76,897,729	74,801,877
Retirements	*366,304	*104,253	*112,826	*69,888	*117,636	*66,928	*135,842	32,563
Deferred maintenance and major repairs	*3,349,598	*1,525,674	*193,217	*45,551	*495,457	.....	*2,660,924	*1,480,123
Amortization of defense projects	8,906,418	372,688,411	3,914,149	82,969,888	1,325,660	81,763,605	3,666,609	207,954,918
Equalization	425,117	60,584	*4,195	*29,418	399,262	*889	30,050	90,891
All other	1,136,291,882	1,115,390,810	486,927,024	463,408,130	204,981,116	201,971,297	444,383,742	450,011,383
Traffic	150,554,584	130,301,672	54,902,961	46,569,298	28,289,842	24,619,565	67,361,781	59,112,809
Transportation—Rail line	2,924,540,254	2,745,119,859	1,275,121,721	1,198,905,187	505,197,005	462,106,187	1,144,221,528	1,084,108,485
Transportation—Water line	.....	.....	.....	.....	.....	.....	.....	.....
Miscellaneous operations	118,107,607	110,822,886	44,706,734	40,545,513	15,443,946	16,867,675	57,956,927	53,409,698
General	211,524,292	190,722,233	83,825,544	77,608,375	41,931,799	37,101,204	85,766,949	76,012,654
Railway operating expenses	5,807,723,101	6,086,670,396	2,424,802,631	2,425,544,520	1,051,916,096	1,081,682,135	2,331,004,374	2,579,443,741
Net revenue from railway operations	1,182,348,982	2,198,257,569	350,196,781	689,132,303	262,032,958	439,354,902	570,119,243	1,069,770,364
Railway tax accruals	527,583,017	1,145,902,237	175,964,815	290,680,804	133,583,388	260,670,131	218,034,814	594,551,302
Pay-roll taxes	233,266,150	211,762,214	97,820,047	87,837,173	42,255,748	36,687,237	93,190,355	87,237,804
Federal income taxes	54,192,361	666,242,299	*17,654,821	88,729,388	43,382,118	171,426,835	28,465,064	406,086,076
All other taxes	240,124,506	267,897,724	95,799,589	114,114,243	47,945,522	52,556,059	96,379,395	101,227,422
Railway operating income	654,765,965	1,052,355,332	174,231,966	398,451,499	128,449,570	178,684,771	352,084,429	475,219,062
Equipment rents—Dr. balance	103,374,842	122,088,080	46,610,997	51,495,640	*6,599,829	*2,760,164	63,363,674	73,352,604
Joint facility rent—Dr. balance	35,682,066	38,991,914	18,357,513	19,536,619	4,290,402	4,226,045	13,034,151	15,229,250
Net railway operating income	515,709,057	891,275,338	109,263,456	327,419,240	130,758,997	177,218,890	275,686,604	386,637,208
Ratio of expenses to revenues (per cent)	83.1	73.5	87.4	77.9	80.1	71.1	80.3	70.7

* Decrease, deficit, or other reverse item.

† Railway operating revenues are after deduction of $4,485,044 for the eleven months ended with November 1946 and $42,458,899 for the eleven months ended with November 1945 to create a reserve for land grant deductions in dispute.

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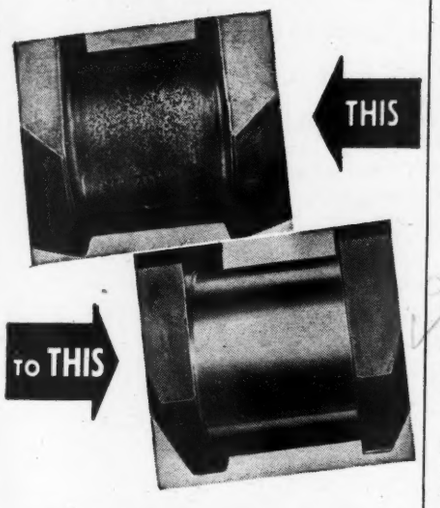

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PAMPHLETS

Thos. Cook & Son John (1808-1892) (1834-1899)—and their Travels, by Harold White. 24 pages. Text of an address delivered at a luncheon of the Newcomen Society of England in New York on December 13 at which Mr. White was guest of honor. Printed at the Princeton University Press, Princeton, N. J.

A short biography of Thomas Cook and his son John in which are outlined how the former happened to organize his first travel group, and how, as a result thereof, Thos. Cook & Son was established. The growth and development of the company are also briefly outlined.

A. A. R. Freight Commodity Classification, 1947 Edition. 196 pages. Published by the Accounting Division, Association of American Railroads, 330 Transportation Building, Washington 6, D. C. Price, 75 cents (when ordered in quantities of less than ten); 50 cents (when ordered in quantities or ten or more).

Designed to carry into effect the requirements of the Interstate Commerce Commission for reporting railroad freight commodity statistics effective January 1, 1947, as provided in the Commission's order of September 24, 1946 (as amended October 16, 1946), this pamphlet contains an alphabetical list of articles assigned to commodity classes, and a numerical list of commodity classes with articles assigned thereto, superseding the R. A. O. A. Commodity Classification, 1928 Edition.

The Transport Situation in Europe, compiled by the European Central Inland Transport Organization, 79, Avenue des Champs Elysees, Paris VIIIe, France. No. 11, August, 1946, 64 pages. Price, five shillings.

Contains a summary and forecast of the production and export of transport equipment from the United States together with a table of these exports for the eighteen months January, 1945-June, 1946, and a report on the transport situation in Poland for the five months February-June, 1946, in addition to material for the month of July for other European countries.

Statistics of Steam Railways of Canada for the Year Ended December 31, 1945. 168 pages. Published by the Dominion Bureau of Statistics, Transportation & Public Utilities Branch, Department of Trade and Commerce, Ottawa, Canada. Price, fifty cents.

Contains complete statistics on Canadian railways, for the country as a whole, and for individual roads. Subjects covered include mileage, revenues and expenses, equipment, traffic, employees and compensation, and accidents. Country-wide statistics cover the years 1940-1945. Statistics for individual roads cover the year 1945 only.

Accident Bulletin No. 114, Calendar Year 1945. 118 pages. Prepared by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. For sale by the Government Printing Office, Washington 25, D. C. Price, forty cents.

Contains a summary and analysis of accidents on steam railways in the United States during the year 1945.

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